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GIFT

Gleanings in Bee Culture

VOL. XXXIX

JULY 15, 1911

NO. 14

Table of Contents

Editorial

Stray Straws

Siftings

Bee-keeping in California

Bee-keeping in the Southwest

Conversations with Doolittle

What a Woman Can Get Out of Bee-keeping . . .
Anna Botsford Comstock

Bee-keeping in Florida *B. G. Baldwin*

Shade Needed More for the Keeper than for the Bees . . .
G. C. Greiner

Entrance Ventilation During Winter *S. D. House*

The Short Course in Apiculture at the Ontario Agricultural College

Smoking Bees at the Entrance *S. D. Chapman*

More about Wintering a Surplus of Queens in One Colony
G. W. Joice

Moving 100 Colonies of Bees 1200 Miles *Wm. L. Couper*

The Danzenbaker Hive *F. G. Railey*

Trouble Between Breeder and Buyer . . . *John E. Taylor*

Heads of Grain

Our Homes



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THE A. I. ROOT COMPANY

333 11th St., Washington, D. C.

Phone, M. 4237--m.

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Editorial

WE shall be pleased to get more reports from those who have tried the steam-heated uncapping-knife. If you have one, let your brother bee-keepers have the benefit of your experience.

CARBOLIC-ACID SOLUTION FOR THE PREVENTION OF ROBBING.

In this issue our correspondent Mr. J. E. Crane speaks of the value of a carbolie-acid solution for the prevention of robbing. If what Mr. A. W. Gates, of Hartford, Ct., says of it is true (and we have no reason to question his word) the intelligent use of the drug will prove a great boon to bee-keepers. We would respectfully ask Mr. Gates and Mr. Crane to describe exactly how they use it in order to get the best results.

OUR MOVING PICTURES.

ONE of our subscribers objects to the way our artist has been grouping some of our "moving pictures." He characterizes some of them as "jumbled-up messes without head or tail." We looked over some of our late grouping, and see that the vital part of each picture is preserved. Where the pictures overlap we have covered up only that portion that is unimportant, or already shown in another picture in the same series. Each picture in the group is numbered, and our correspondents are instructed to refer to each figure of the group and explain what it all signifies. But the real object in grouping is to save space. If any of our subscribers have been confused by our grouping we hope they will tell us, for we always court fair, honest, and frank criticism.

THE LARGEST EXTRACTOR IN THE UNITED STATES OR CANADA.

MR. R. F. HOLTERMANN, of Brantford, Ont., is the owner of the largest extracting-outfit in the United States or Canada, if not in the world. It is a twelve-frame automatic reversing extractor run by a gasoline engine; and in connection with the extractor, and geared to it, is a centrifugal honey-pump that does the work of lifting and carrying the honey to a tank overhead or to one side. This makes it possible to have

the extractor on the floor of the extracting-house—not elevated above it. In the bottom of the machine is a Holtermann strainer, and the top is covered with a protecting shield.

The editor has been invited to see this whole thing in operation—that is, providing the railroad company will deliver the outfit to him in time. At the last report the machine was lost somewhere in transit.

MAKING OUR GOODS CORRESPOND WITH OUR ADVERTISING; IS THERE SUCH A STRAIN AS GOLDEN-ALL-OVER BEES?

ON page 439 of this issue Mr. J. E. Taylor handles this whole proposition in a most masterly manner. In this particular case the question all hinges on what is meant by "golden-all-over Italians." Several of our advertisers, without the least thought of defrauding, have used various catchy phrases in describing their strains of bees—phrases that are not ordinarily misleading or misunderstood. The facts are, we have seen a few specimens of "golden-all-over Italians," and some more of strictly five-banded bees, in a colony that was advertised and sold as five-banders. But when a customer receives some beautiful yellow bees, 30 per cent of which we will say are five-banders, 60 per cent four-banders, and 10 per cent three-banders, he is usually quite well satisfied, because the so-called five-banders, as a lot, present a most striking contrast in color and markings to the ordinary three-banded leather Italians. He is so well pleased with the *general effect* that he makes no complaint. Indeed, he does not even notice the disparity between the four-banders and five-banders. In the same way, a customer who orders and buys golden-all-over Italians is usually quite well satisfied if there is a large predominance of yellow in his bees. But as our correspondent, Mr. Taylor, says elsewhere, if one advertises "golden-all-over Italian bees" he ought to make the explicit statement that they are not yellow all over, but only in part.

In the same way those of us who advertised a long-tongued strain of Italians might come in for a fair share of criticism. While we

might advertise to sell queens producing long-tongued bees, the facts are that not *all* queens from a long-tongued mother will show the abnormal development advertised. It is almost impossible for a queen-rearer to duplicate the characteristics of his breeding queen. The fact that Nature has designed that there shall be promiscuous mating among the drones, explains how sports showing "extra yellow" or "long tongues" revert back to normal in spite of us. It was for that reason, several years ago, we discontinued advertising long-tongued bees. When we lost the old original long-tongued breeding queen we found that her daughters were not quite equal to the mother, and the granddaughters showed a still greater departure, until the great-granddaughters went back to the original type. If we could control the male parentage a little better we might be able to produce golden-all-over Italians and five-banders that would be true to name, and not bees that show a sprinkling of three, four, and five banders.

It ill becomes us to criticise any of our queen-breeders who have been advertising in our columns; but "poetic license," if we may use the term, has been carried too far. We might as well admit the fact, first as last, that many of us if not all of us have been living in glass houses. If so, is it not about time for us to start a reform all up and down the line? We are not dictating what our advertisers shall say; but may it not be just as well to substitute the names "golden Italians," or "extra golden Italian"? These terms are flexible enough to admit of variation and yet make no misstatement; and until we can control the male parentage, none of us can guarantee golden-all-over or five-banded bees, although it is possible, as we have said, to pack a mailing-cage full of each class of bees out of extra-yellow stock.

DIAGNOSING AT THE ENTRANCE; HOW TO DETERMINE THE CONDITION OF A WHOLE APIARY IN A COUPLE OF HOURS.

IN this issue two of our correspondents—G. M. Doolittle and S. D. Chapman—refer to the possibility of diagnosing the internal condition of a colony by certain manifestations at the entrance, or by a glance over the tops of the frames. Some years ago, as our older readers will remember, we wrote a number of editorials showing the feasibility of ascertaining the condition or needs of a colony without going down into it or removing a single frame. While an accurate knowledge can not always be obtained in this way, yet a busy man of experience will approximate conditions in any particular colony when the bees are flying well. For example, in the height of the honey-flow some colonies will need supers, and others additional supers if they already have one. To open up the hives to determine whether the bees need room means a lot of work and time. We have found that we have been able repeatedly to tell by the flight of the bees at the entrance whether

the colony in question needed any more room or not. For several seasons, as a matter of experiment during the honey-flow we have tried the plan of running an outyard by making only two or three visits a week, and spending an hour or two at each yard. We found we were able to give each colony the attention it required, largely on surface indications. If in doubt we opened up the hive. At the close of the season's work scarcely a colony had suffered from a want of proper attention.

But the beginner may ask how we can tell by the flight of the bees whether they need room or not. If we see them streaming in and out like hot shot, and appear to be laden when they come in, and the record on top of the hive shows the colony was given a super a week previously, we conclude it needs more room, and we set an empty super beside it.

The next hive does not seem to show much activity at the entrance—that is, the bees are not flying much if any. We pass this. The next colony is doing a little better, but not a great number of bees are flying. We pass this. The next hive shows a stream of bees going in and out. We lay an empty super beside it. The next hive, a powerful colony that was working strongly a week ago, has a lot of bees clustered in front. Bees are going to the field, but in a sort of listless way. Right here we may expect swarming-cells; some Italian colonies, instead of going into the super, will jam honey in the brood-nest. In this case we find the combs are "honey-bound," and very little capped brood and queen-cells in all stages of development. We destroy the cells, uncup the honey, and put into the super a section or two started from some other colony. We smoke the bees at the entrance, and say, "You fellows get busy and clean up the dripping honey from your combs."

It may be that this work was done too late; but many times it has the effect of starting the bees at work in the super.

We again begin our rounds of the hives. The next colony shows a roar of bees at the entrance; but the bees are not going in any particular direction—just flying aimlessly around in front. This is a clear case of playspell on the part of the young bees. We pass this hive for the time being, and so on through the whole apiary. When we get through we have, perhaps, a dozen or so colonies with empty supers along beside them. With smoker in hand, and a hive-tool, we lift the covers of all colonies in one row at once. We drop the hive-tool and smoker, then proceed to put the supers on, and finally cover each one of the colonies. In some cases we put the super under, and sometimes we put it above a super already on the hive. In the same way we treat other colonies in the other rows.

We now come back to the colony that was having a playspell. They have quieted down; but as they do not seem to be flying heavily to the field, we pass them. In two

or three days we come back and go over the apiary again, spending perhaps an hour in watching the flight of the bees, and opening up here and there a hive to confirm surface indications at the entrance.

In this connection it may be said that, if the entrance diagnosis does not satisfy, the cover is lifted, and then we determine whether the bees have room enough without pulling out a frame, by looking at the tops of the frames. If they are bulged and whitened, we put on the super; if not, we replace the cover. When making examinations from the top, it may be necessary to smoke the bees down as our correspondent, Mr. Chapman, says in this issue, before we can see enough of the combs to determine what is needed.

When the season draws to a close, entrance diagnosis will determine better than any thing else when the nectar supply is beginning to fail. The bees fly to the fields, but come back lightly loaded; act a little nervous; as the season progresses further, there will be here and there colonies pushing the drones out of the hive. There is no need of looking down into the colony; for when it is time to kill off the drones, the honey-flow is surely approaching an end, and, of course, no more supers should be put on. It may be that some of the others may have to be taken off. In the production of comb honey, the effort now should be to finish what work has been begun, if it is not already too late.

There is another indication at the entrance that is very reliable in determining whether a colony is doing much in the supers. Along in the evening, or just about dusk, pass along the hives and listen to the roar of the bees evaporating honey they gathered during the day. The bees that are roaring the most are the ones that gathered the most honey; but in noting this surface indication we must take into account the strength of the colony and the source. Bees will gather much more honey in a given time from basswood or buckwheat than they will from clover. This fact has an important bearing on how soon the bees will need more room. Clover, unless very abundant, is a slow all-day yielder.

Both Mr. Doolittle and Mr. Chapman determine to some extent whether a colony has a laying queen around by the presence or absence of bees coming in laden with pollen. This is quite a reliable diagnosis in the spring or early summer. There are many more entrance indications, but we will leave the rest to be discussed by our correspondents.

HONEY-CROP CONDITIONS.

THERE is not much new to report since our last issue except this: Recent rains in some localities have started clover up again, and honey has been coming very slowly from this source. Basswood is yielding in many places, and apparently there will be more of this rich honey this season than usual. The conditions along the Mississip-

pi River, taking in Iowa, Illinois, Nebraska, and Kansas, are not much improved. The drouth has been severe in this section. Late reports from Michigan and New York show that some clover and basswood will be secured. Taking it all in all, while the crops this year will be larger than last year, prices will remain firm. We should rather expect a slight upward tendency than otherwise until about the holidays, when prices will begin to sag slightly.

HONEY REPORTS.

The following are a few scattering reports that came in too late for our last issue, and have been gradually accumulating since:

The weather keeps good so far for late honey.
Riverside, Cal., June 21. CHESNER MFG. CO.

There will be no white-clover honey to speak of in Southern Wisconsin. Basswood opened up nicely. We hope for a good run.
Bridgeport, Wis., June 21. HARRY LATHROP.

Bees are robbing; no supers on yet; no white clover. White clover is our only crop, so things look bad for this year.
Ripon, Wis., June 19. ARTHUR J. SCHULTZ.

No early flow on account of drouth. Fine basswood bloom, but no nectar coming in. Therefore no prospects for yield this year.
Miami, W. Va., June 26. JOHN D. THOMAS.

The crop outlook is rather discouraging; no white-clover to speak of in this part of our State this season. My own bees are located near a few acres of alsike clover on low land, and I am getting so far a fair yield from that source. The honey crop here will not be enough to supply the local demand, I think at this date.
Dartington, Mo., June 22. GEO. H. CURT.

Bees came through the winter in good condition, but dwindled down badly during March and April, but have built up in fine shape for the honey-flow from basswood, which is the best in ten years; but as there is nothing else to work on, our honey crop here will not be enough to supply the local demand, I think at this date.
Bertram, Iowa, June 26. H. C. CLYMER.

The honey-flow is very poor to date. The future depends on the weather. The honey is light amber; very little white honey. The crop is not as good as last year.
Chamberino, N. M., June 24. B. B. FOUCH.

Clover in this section is a failure so far. Basswood has bloomed full, and is yielding quite a little honey. It looks as though there would be about half a crop.
Boston, Mass., June 23. H. H. JEPSON.

As one-half to two-thirds of the bees in this immediate territory are dead from starvation, and very little blossom from the first cutting of alfalfa or sweet clover, there was nothing for them to subsist on. There will be almost no crop of importance. With what bees are left there may be one-fourth to half a crop. It is very discouraging to the apiary people; and if this continues it practically eliminates an industry that has been of importance in this locality.
Denver, Col., June 26. THE BARTELDSE SEED CO.

The bees got a good crop of basswood honey. There was no white clover this year. It has been very dry in Iowa.
Anthon, Ia., June 28. G. W. NANCE.

The drouth from which most parts of this State have been suffering was partly broken by a nice rain Sunday. However, the ground was so dry that another good rain will be necessary in a few days to give any material benefit. Some parts of the State received no rain Sunday, but it appears that they were few.
Des Moines, Iowa, June 27. THE A. I. ROOT CO.

Prospects for a fair crop in this locality are favorable. Basswood and sumac are just opening; good colonies have two weeks nearly full; clover is scarce; sweet clover will be on a week later.
Athens, Ohio, June 26. J. C. ATKINSON.

There is not sufficient honey produced in this section to make a market. Nearly all of the honey consumed here is shipped in from Yakima or Southern Idaho, and we believe that sometimes California honey is also sent in. The orchard-ists of Eastern Washington and Northern Idaho are now becoming interested in bees as an adjunct of the orchard, and we hope in time that it will have a tendency to change the condition so that the honey for the Spokane market will be produced here.
Spokane, Wash., June 27. SPOKANE SEED CO.

The honey-crop condition is better this year than last in this section. While the clover flow was not heavy, it has been lighter in previous years. There is practically no basswood honey taken in this vicinity, the heaviest flow this year being from early fruit-bloom and locust. The bee-keepers locally experienced a very hard winter, the majority losing the greater number of their bees from starvation, thereby having a large number of empty hives left over, which cut the orders for supplies down considerably.
Baltimore, Md., June 26. RAWLINGS IMPLEMENT CO.

Our honey crop here is a total failure. My 100 colonies have not a single super finished. We do not get a fall flow. Temperature runs over 100 every day; vegetation is about all burned up. I think the clover is all killed.
Holden, Mo., July 6. J. M. MOORE.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

BEES are quite sensitive to cool winds. Half of my hives face east and half west. On a cool morning, with a light breeze from the west, I found bees hanging down more or less at the entrance in 43 hives facing east, and in only two facing west.

ALLEN LATHAM read that Straw, p. 322, which says that .003 per cent of formic acid in honey means one part in 333. Then he wrote: "How would one part in 33,333 strike you? Would not one in 333 be rather tough on the stomach?" Of course, he's right. And I had an idea I was pretty reliable in figures!

JUNE 15, No. 77 swarmed with the old queen and a virgin. That's the first time I ever positively knew such a thing to happen. I suppose cells were started for swarming, then the dearth made the bees give up the notion of swarming; but for some reason they did not, as usual, destroy the queen-cells. Then when these matured, the swarm issued.

"DO QUEENS lay unfertile eggs?" p. 383. Sure, they do. I had one queen which laid eggs, and none of her eggs ever hatched. But such cases are *very* rare. It is possible that there are queens which lay bad eggs in part, but I suspect the average queen never lays an egg incapable of hatching. [We hope you are right in your last statement, but believe you are wrong.—ED.]

"DURING the flow of alfalfa" is a phrase used on page 403 that seems to refer to New York State. Do let us hear more about it. On only one or two occasions have I seen bees on alfalfa here. But I've always had a hope that, through some 'change, it might get to yielding. Does it yield at Camillus as well as out west? [Yes, and yields well. Mr. House will have something to say about it.—ED.]

IN A COLONY where, for the past 21 days, the queen has been laying the same number of eggs daily, about 14 per cent of the cells that she has occupied will contain eggs; 26 per cent will contain unsealed brood, and 60 per cent sealed brood. Early, when laying is on the increase, the proportion of eggs and open brood will be greater; and when laying slackens in the fall the proportion of sealed brood will be greater.

CHR. BOESCH, *Schweiz. Bztg.*, 258, lauds this way of making an artificial swarm: Take from a nucleus the laying queen with one or more frames of bees; put it into a hive and fill up with full sheets of foundation. On this put a bee-escape, and over it put one or several supers that you are about to harvest. The bees unite kindly, and the queen is never harmed. Mr. Boesch imprisons three days, and feeds. Some experience of my own makes me prefer to give more bees and omit the imprisonment and feeding.

THE BEST thing for killing ants of any kind is arsenic in syrup. The commercial ant-pastes are made so strong in arsenic that the foraging ants are killed almost immediately, leaving the rest of the family in good health. Make it weak, one to two parts of arsenic in 800 of syrup, and large quantities will be carried to the nest and the whole colony slowly poisoned.—*American Bee Journal*, 168.

MAG. PONS, *L'Apiculteur*, p. 201, reports bee paralysis very destructive in his region. He thinks the disease is conveyed from one adult bee to another in the same hive. Healthy colonies that rob out diseased colonies remain healthy. A swarm hived on combs on which a diseased colony died remains healthy. He cured in this way: Every half-hour for three days he brushed the sick bees off the platform and threw them far away. After the third day the cure was complete.

IT IS SAID, p. 361, that Dr. Miller "has for years used a 24-lb. section-case." That might be understood to mean that I had never fairly tried any thing but a doubler case. For years I used 24-lb. doubler, made specially to order. Then, in order to be in fashion, I used mostly 12-lb. single-tier, and some 24-lb. single-tier, and for several years have used no more 24-lb. doubler until I used some for part of my last shipment. So I think I know how they compare for my own use.

THERE IS a tradition that to crush a bee angers the colony. No one of proper feeling needlessly crushes a bee; but I have yet to see any proof that bees resent the crushing of a bee any more than the crushing of a spider or a piece of paper. [We agree with you, providing that crushing kills the bee or paralyzes it outright; but a bee that is pinched enough so that it will squeal may excite the fury of a good many other bees in the colony. This is particularly true of Cyprians, as we know from some unpleasant experiences.—ED.]

L. S. CRAWSHAW, speaking of correct bee terminology, says, *British Bee Journal*, p. 178: "Dr. Miller, who admonishes D. M. M., would apparently abolish the word 'stock,' and confine us to 'colony.' Yet the term 'stock,' as used in this country, has its definite use as opposed to the term 'swarm,' whilst colony would surely, speaking strictly, include both. But perhaps Dr. Miller will explain." Instead of explaining I want to crawl. I think I never used the word "stock" as applied to bees, but have hungered for a single word that would mean the mother colony from which a swarm has issued. If "stock" has that meaning in Great Britain, I am only too glad to follow the example, with many thanks to Mr. Crawshaw.

SIFTINGS

J. E. CRANE, Middlebury, Vt.

On page 260, May 1, the editor advises the use of no adjective before the word honey. A good point.



The picture of Wesley Foster's cow, page 248, April 15, shows very plainly that her diet agrees with her, and we believe it would with a very large number of other cows and "horned cattle" if they only had a chance to use it.



A CORRECTION.

On page 293, May 15, I am made to say, "Why is it that among the many *means* found in magazines now, one never sees honey and warm biscuit mentioned for the tea-table?" It should be *menus*, not *means*.



That "bee-sieve" Mr. Greiner tells of on p. 171, March 15, is worth a year's subscription, and I will try to make one at once before I forget about it. Suppose one has a dozen dark queens to look up, and it takes half an hour each, as it often does, several hours' time would be saved when it is most valuable.



BULK HONEY NOT PRACTICABLE IN THE NORTH.

After reading Mr. Mollett's article, page 298, May 15, I came to the conclusion I should become a bulk-honey enthusiast if I lived in the South, where the honey does not granulate; but here, where it will become solid in a few weeks, I rather think our way is the best.



BEES AND HORTICULTURE.

Wesley Foster, after telling of the interest those who keep bees take in other insects asks if it is not just a little queer to be interested in bugs, bees, and flowers, page 264, May 1. No, sir; it is not queer at all. But it is queer that our race should have cared for bees so long, and never, until recently, found out the true relationship of bees to flowers, to say nothing of other insects. If the Author of all life has so ingeniously created all the little creatures we see on every hand, shall we not see his purpose and their use in the economy of nature? I used to wonder, when I saw a little attenuated insect with two wings, of what use it could possibly be; but when we had a scourge of forest worms these insects could destroy them quicker than an army with banners. Let us try "to think his thoughts after him."



SLEEPING OUTDOORS.

In a recent number of GLEANINGS Mr. Wesley Foster tells of an arrangement for sleeping out of doors. More and more is fresh outdoor air appreciated as a means of gaining and retaining health. But one of the blessings of sleeping out in the open air

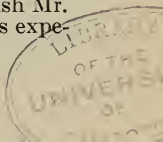
or with open windows I have not seen named, and that is, the enjoyment of the grand concert or chorus of bird songs that begins about 3:30 in this latitude, and lasts for nearly two hours, and is one of the most enjoyable things that come with spring. Indeed, it might also be called an endless chorus, for it begins on our New England coast with the early dawn, advancing westward with advancing twilight until it has crossed the continent, up the northwest coast across Alaska, across the continent of Asia, and still westward until it reaches the broad Atlantic nearly twenty-four hours later. If the birds thus blindly give of their best to the great Author of life, how much more may we who have thought and reason show forth our gratitude for all we enjoy!



CARBOLIC-ACID SOLUTION FOR PREVENTING ROBBERING.

"Carbolic Acid in Spraying Solutions Would Have No Effect" is the heading of an article on page 221, April 1, by B. C. Auten, in which he proves to his own satisfaction that the odor of carbolic acid has no effect whatever on the bees. It looks as though he had sat down on me. If I can't get him off I am going to "holler" until every bee-keeper in the country can hear me. Now, I do not suppose that, if bees had "got a going" in cleaning out a hive the odor of a little carbolic acid would stop them; or if thirsting to death that a little odor would stop them; but I do say that, in handling bees when forage is short, and they are inclined to rob, the use of a spray, or sprinkle of a strong solution of carbolic acid, promises to be very helpful in preventing robbing.

For those with few hives who can do their work near night, or those whose yards permit the use of a tent, it may be of little value; but for those who must work almost constantly, without regard to other conditions, I feel that it would prove of great value. Mr. A. W. Gates, of Hartford, Ct., who called my attention to it last year, said that with the use of it he could work with perfect safety with bees, inspecting for foul brood, without regard to whether honey was coming in or not. I tried it with satisfactory results late last year, when looking over my bees. Where the acid was used, robbers would leave a hive almost as soon as closed, and not keep trying every crack and corner for an entrance. I received a letter from him a day or two ago, in which he called my attention to it and its value in inspecting for foul brood. I might add that Mr. Gates is one of the most intelligent bee-keepers of Connecticut. Now, I wish a large number of bee-keepers would try it, not for the purpose of stopping robbing after they get at it in full force, but before they begin, and see if it doesn't prevent it. I wish Mr. Gates might be persuaded to give his experience along this line.



BEE-KEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

TROUBLES FROM SUPERSEDURE.

Out of 25 swarms at the Tremont ranch this season, 24 were superseding ones. This gives an idea of the trouble we have had from queens being superseded, for many supersedures occurred where there was no swarming.

COOL CLOUDY WEATHER THE RULE.

Mrs. Acklin p. 324, June 1, speaks of the cool cloudy weather during orange-bloom. When she has been a resident a few more seasons she will look upon this condition as a rule rather than the exception, though we who are 40 miles further inland do not suffer as much as do those in her locality. Many of the ocean fogs reaching there do not come so far inland, though we get plenty.

A GOOD CROP CONSIDERING THE AVAILABLE WORKING FORCE OF BEES.

There has never been a season, to my knowledge, when the stock of bees remained so low during the entire honey-flow; yet for available working force the results have been very satisfactory. Our failure to harvest a large crop was due alone to the shortage of bees, the strongest colonies having only five to six frames of brood when the honey-flow began in earnest. This, with the constant wearing-out of the field force, seemed to make it difficult to get a full hive of bees.

SOME PECULIAR HABITATIONS OF SWARMS IN CALIFORNIA.

On page 561, Sept. 1, Mr. Calvin S. Hunter gives as a most remarkable incident his experience of swarms entering empty hives. This to us Californians sounds odd, for out here they enter about every thing that is empty—houses by the score, chimneys, rocks, badger-holes, box culverts, etc. One swarm was taken from an old coffin-box from which the remains had been removed and the box cast aside; one from an electric transformer-box on the city lighting system. One entered a five-gallon tin can that had been thrown over a dump, and dirt from above had covered all but the screw-cap hole.

PRICES ON WATER-WHITE HONEY THIS YEAR.

When I contracted my white and water-white early in June at 7 cts. I was elated at the price obtained; but since that time others have sold at 7½ cts. Most of the white brought 7 cts.; earlier some sold for 6 cts.; but the bulk of the crop went at 7 cts. The total crop of white and water-white for the season will not be over half the average for sage-yielding seasons, the orange having contributed but a small amount of the total. It would not be surprising to see a fair crop of amber grades secured in our Southland,

though I do not expect this immediate locality to figure largely in those grades, the best late ranges being out of our reach.

COAST VS. INLAND BEE-KEEPING.

Mr. E. M. Gibson's letter, June 15, speaks of my location as the northern part of the State. I am only about 100 miles, as the crow flies, from him, and only 60 north. California is a large State, 700 miles long. San Bernardino Co. is larger than the State of New York. On page 274, May 1, he says he knows of no one who is not back from the coast more than 15 miles who is making a success of bees. This may be true in San Diego Co., but it will not apply further up the coast.

In the same article Mr. Gibson admits he meant to imply that it was the fault of the bee-keepers that they got no more honey last season than they did. That may have been the case in Mr. Gibson's locality, but not so here.

NO SAGE, BUT ORANGE HONEY.

Mr. J. K. Williamson, known generally as the leading bee-keeper in this locality, and a man of 40 years' experience, had one apiary of 250 colonies on one of the finest sage ranges I know of, that did not yield a pound of surplus, while another one owned, by himself and partner, in reach of the orange, yielded several tons. I am glad Mr. Gibson has come to the same conclusion that I mentioned in my article, that it is *better*, not *more*, bee-keepers that we need. He also says, "White sage is the sheet anchor of the bee industry here, although it is a decided amber." With us it is considered only an occasional yielder, and as producing white honey. It has not yielded to any great extent since 1905. That season it was late, and the rains lasted into May. We got two good extractings from it in July after button sage and wild alfalfa were gone, the honey grading water-white, though closer grading was done then than now. This year the bloom will be gone by July 1. We have had to contend with wild alfalfa and wild buckwheat during its blooming period, yet 25 cases I have just extracted from it will grade white. It has yielded more this year than any year since 1905, though only very moderately this year. Mr. Gibson has doubtless not observed closely all the sources of his supply while this plant was blooming.

Honey crop conditions in the northern part of the State are good from alfalfa and clover; no sage; orange, one-half crop; general crop, three-fourths. Market conditions are good, dealers paying 5¾ for light amber; 7 for water-white. Producers are holding for 6¾ for light amber, 8 for water-white.

B. B. HOGABOOM.

Elk Grove, Cal., June 29.

Bee-keeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas

"SHAKING ENERGY INTO BEES."

A good deal was said on this subject at one time, but not much stock was taken in it. There may not be so much in it after all; but in our manipulations in the apiaries we have always practiced shaking the bees up as much as possible, for the purpose of securing increased activity, better work, and, consequently, better results in the end. Have we gained any thing by this imaginary (?) practice?

We began to investigate this matter nearly twenty years ago when we discovered that certain manipulations and handling of the combs, disarranging them in certain ways, and yet not enough to do any harm to the brood, and other factors important to the best welfare of the colony, created a greater activity in the colonies so treated. As a consequence, we have not only continued to practice the method but have advocated it, and we require our assistants each year to do the same.

There is no doubt in our mind that various manipulations at certain times will create greater energy in the work done by a colony of bees than if it is left alone the entire season. Then, to go a step further than this, there can be no doubt that additional manipulations, carefully learned and practiced after years of observation, may add to the advantages obtained from such methods. This has been our experience, and we have profited thereby to such an extent that we do not fail to make use of "shaking energy into bees" whenever advisable. But we do not practice as radical methods as have been advocated by some writers. There is a limit to every thing.



THE WIDE-BEVEL UNCAPPING-KNIFE.

The more we study the question of honey-knives, the more we are convinced that we have not been far off the track in using the common butcher-knife for a number of years. After trying a great many uncapping-knives of different styles, including such flat-bladed knives as the Novice, the narrow beveled-edge Bingham, the old-style Jones, with its bevel extending to the center of the back of the knife, and various common straight-bladed knives, we have once for all settled on a straight-bladed butcher-knife, of which the cutting edge is slightly curved so that it will extend into the frames when uncapping thin combs. They have given us the best of satisfaction; and other bee-keepers who have visited us for the purpose of finding out more about the exact shape and size of these knives, on learning to use them have adopted them. In answer to several requests, exact drawings, made by placing one of the knives on a large piece of paper, have been furnished so that the right kind of knife with the exact shape might be procured by the enquirer.

Our experience, after several years' use of these knives, has proven to us that they are very satisfactory for the purpose, and much more so than any of the unwieldy, beveled-edge knives with crooked or offset handles. Our butcher-knife is much easier to handle. It is just like cutting off steak from a large piece of beef when we uncap our combs. A butcher most certainly would not think of doing this with such an awkward knife as one with the offset handle. The straight-handled knife is easier to manipulate; and its slightly beveled edge extending the entire width of the blade makes it easier to guide smoothly over the comb surface.



A REMARKABLE SEASON IN TEXAS.

During the early months of the year there was an abundance of rain. In fact, there was considerable complaint; for the long-continued wet weather, in addition to the cold damp atmosphere lasting so long, had a bad effect on the bees. The rains were badly needed, however, after several dry years during which we had very little rain. Because of the moisture in the ground, resulting from the rains, the prospects for an abundant crop were most favorable. In most parts of the State the bees built up very rapidly, as the spring flowers were in greater profusion than for many years. The cold damp weather retarded the progress of the colonies in many ways, as the weather was too bad for the bees to get the necessary water and pollen at the time the hives were filled with brood in all stages. And when the main honey-flow began, excessive rains again delayed the work of the bees so much that the spring crop in many places was very short. The heavy and constant rains also had a bad effect on the plants and the blossoms, from which the spring crop was expected, tending thus in two different ways to cut off the honey-flow.

Immediately after the excessively wet spell a most severe drouth followed, and this affected both the bees and the vegetation. During the rainy season every thing had grown very rank and tender; the excessive heat following so suddenly simply burned up the vegetation. The bees were then cut off from doing much work on the fast-disappearing bloom.

At the present time this most severe drouth continues, and every thing is suffering from it. In spite of this, however, we are in the midst of as fine a honey-flow as we have had for several years, and the bees are rolling in honey from very early in the morning until late at night. The source is the *mesquite-trees*, which are loaded with fragrant blossoms. And since the bees have just finished working on the horsemint, the colonies are in shape to store up a good amount of surplus of fine bulk comb honey.

Conversations with Doolittle

At Borodino, New York

DIAGNOSING AT THE ENTRANCE.

"Which is better, to let colonies entirely alone during the year or to be continually fussing with them?"

"Well, Mr. Barber, neither plan is right. No man can become a successful bee-keeper without properly looking after his bees; but this does not mean the overhauling of any or all colonies once a week, nor does it mean passing through the bee-yard once a week and merely looking at the hives. However, an experienced bee-keeper by this latter plan can often tell if it is necessary to open certain colonies to correct any thing wrong. Certain outside appearances which may be discovered from the entrance and outside of the hive of the one colony will tell very nearly about all colonies.

"Suppose it is the spring of the year. You stand and look at the entrance of the hive containing a good queen and a prosperous colony during some fine morning in May. You will see the bees going in and out quite rapidly. You will note that the bees take wing at once after they are out from the entrance, leaving in the air in a straight line and at rapid flight. Then those returning are bearing loads of pollen in their pollen-baskets, or have swollen abdomens from carrying water or nectar for the wants of the rapidly increasing brood and for the colony. If you are to make a successful bee-keeper, such manifestation at the entrance will so impress itself on your mind's eye that you will ever after know just what to expect at the entrance of a hive containing a prosperous colony.

"But if you have never looked inside a colony you can not know just how matters are inside the hive unless you look there as well as at the entrance. Now open this hive; look at the regular order of the brood in the combs; see how the eggs are deposited in the center of the bottoms of the cells; see the eggs are out toward the margin of the combs, little larvæ inside these eggs, larger larvæ still further inward, with sealed brood in the center. Then see how large and nice the mother bee (or the queen as she is called) looks; and if she is a quiet Italian queen see how she is laying eggs. Take out your watch. Note when the second-hand stands at the top, or at 60. Now count as she lays. One, two, three, four, five, six, will be the number during the 60 seconds if she is doing her level best; but if it is only three or four, do not feel badly, for it is a rare thing that any queen does as well as six for many minutes at a time. Say it is four, and that she rests half of the time during the 24-hour day. She will then have laid 2880, and that is not bad at this time of the year, for 3000 eggs is considered the maximum for a daily average.

"Note the pollen. Not more than enough cells having pollen in to fill half a frame. This pollen tells something about the queen.

If she is poor, a large accumulation will be found; but with an abundance of brood it is used nearly as fast as brought in.

"Lastly, look at the honey. If there is to the amount of one to one and a half frames full, they have enough to feed that brood for ten days to two weeks.

"Now close the hive. Stop at the entrance of the next one; and if you see the same thing you did before, there is only one thing that you are in the dark about, and that is the amount of stores the hive contains, and this you can guess at by lifting the hive. But as the brood which the combs contain makes the hive quite heavy with little or no honey in it I think it wise to lift the cover, when, by blowing a little smoke over the tops of the combs, it will be readily seen as to the amount of sealed honey there is, in accord with the one we just looked at; and if as much or more, we know about what this colony is also. Now walk in front of each hive, and then look about the stores with each that compares favorably with what we have in our mind's eye, and all such are just as well off as if we handled the colony every two or three days — yea, better. For with every time we open any hive needlessly, we, for the time being at least, destroy the equilibrium of that colony.

"Now observe the actions of weaker colonies at the entrance, then look over one of them as you did the good one, and you will soon understand about them. If you find any colony which does not compare at the entrance with any of these, open the hive, find the trouble, and ever afterward you will know about what to expect. After the supers are on, go amongst the hives and observe the conditions as to the amount of surplus honey stored. This is more easily told from the entrance and a peep in at the top of the supers than are the conditions during the brood-rearing period.

"Where you see from the outside that something is wrong, or that there is something going on inside that you wish to know about, or that you think may be remedied, don't hesitate a minute about opening that colony to find out what you should do to put it in a prosperous condition. If you find something you do not feel equal to, go to your A B C of Bee Culture, Langstroth's, Quinby's, or any other book or books you may have on bees, and make them tell you. Better still, have the matter these books contain so thoroughly in your mind that it will come to you at once what the trouble is while you are still at the colony."

EXPOSING FAKES, ETC.

I like GLEANINGS very much, and am interested in your poultry department. Keep on in your good work of exposing fake poultry "secrets." I have two colonies of bees.

Sacramento, Cal., June 8.

A. D. MUNGER.

General Correspondence

WHAT A WOMAN CAN GET OUT OF BEE-KEEPING.

An Address Prepared for the Convention and Field Day for Bee-keepers at the Massachusetts Agricultural College, Amherst, June 6, 7.

BY ANNA BOTSFORD COMSTOCK.

[Among the great treats that we enjoyed at the field-day meet and convention that was held at Amherst, Mass., June 5, was a paper by Mrs. Anna Botsford Comstock, an entomologist from Cornell University, on the subject "What a Woman Can Get Out of Bee-keeping." She will be remembered as the author of a most entrancing bee-book, "How to Keep Bees," as well as of a number of papers on bees; but the one she read before the Massachusetts bee-keepers was one of the breeziest and most charming that we have ever heard. While it was long, the reading of it called forth rounds of applause. The most of us felt, when she concluded, that she could have made it twice as long, for we could have listened to every word of it.

From a purely dollars-and-cents point of view, the paper may not be as valuable as some others that appear in these columns; but from the standpoint of health, rest, diversion, and mind cure, it excels every thing else that has been put into print. We now have the privilege of placing it before a larger "audience"—a privilege that was freely granted by the author and by the college authorities as well.—ED.]

There are so many things that a woman can get out of bee-keeping that I wonder more has not been said or written about it. Professor Gates asked me to speak about bee-keeping for women; and while I know several very successful women bee-keepers scattered over this country, from Virginia to Maine, they are all keeping bees just like the men. They keep their colonies strong, and, taking it from first to last, they are making money from their undertakings just as the men do, and by the same methods. If I were to talk about these women or others who are making a success in bee-keeping it would be as monotonous as Mark Twain's boyhood diary in which for a month the entry each day consisted of "Got up and washed, and went to bed."

What has always interested me most in bee-keeping is the psychic income derived from it, rather than the income in dollars and cents. I do not believe that any one who thinks can associate with bees without learning much from them. And who should learn as much as the woman bee-keeper, since the bee commune is managed exclusively by members of her sex? Here there is a chance to observe how and by what means their success has been attained.

I think the first lesson of all is that no one individual can have every thing and be every thing. Perhaps this is the most useful civic as well as social lesson that we women need. Here in our broad, high, and wide America we have had opportunity for development, and with it has come unbounded ambition. With this ambition has come an unwillingness to choose one line of development; we fritter strength and energy by trying first one thing and then another. We are so occupied with trying

our wings and with the sensation of flight that we forget that wings are for carrying us and our load to a goal. But the bee, whatever its lot, does what it is meant to do with a singleness of purpose which we may well admire and follow.

Many are the virtues cultivated in those citizens who have the responsibility of a bee commune. The first of these virtues is patience and forbearance. Each bee in the hive is, to say the least, busy. She is intent on doing her particular job; she finds her path obstructed by her many sisters all intent on doing their particular jobs, but does she get cross about it? No. She just climbs over or under or among the moving throng; she pushes and gets pushed with equal good nature, and finally she achieves her purpose without irritation. Her nerves are not on edge because she is hindered; she does not cuff the children nor scold the drones, nor have hysterics because she is annoyed.

Courage is another of the leading virtues of the hive. We find there all kinds of courage—the courage to fight a creature a thousand times as large as the fighter, and courage to die fighting. Then there is that other courage, so much more difficult to attain—the courage to attend to every duty, and to work from early morn until dewy eve until the frayed-out wings no longer give support, and then the courage to die and get out of the way.

Next in the galaxy of virtues is that of unselfishness. The bee considers the needs of her community before her own needs. She will work her wings off for the sake of her sisters; she will die in battle for them; she will starve herself by yielding up her food to a hungry queen. The bee is not self-centered nor introspective. She goes steadily about her business unless interfered with, and she is not wasting time thinking about her own feelings. She does not feel slighted when she issues from the cell a damp and callow young bee, even if no one pays the slightest attention to her. She cheerfully finds her own place and her own work, and she never gets jealous of the queen. In fact, she is an animated mite of unselfishness. I do not know how other women bee-keepers feel; but when I find an old bee with her wings frayed until they can lift her no more, it always gives me a new inspiration to work on and do the best I can and not worry about old age or the future.

Another of the virtues characteristic of the bee-hive is broad-mindedness. The bee is willing to let others go their way without interference. She seeks nectar, but she does not insist that, if she can not have basswood or clover, she will have none at all. She probes the humblest flower with the same enthusiastic attention that she bestows upon the most gorgeous; moreover, she does not resent it if the flower was not

made for her convenience. She works on the salvia and the nasturtium with the same cheerfulness that she works on the clover. She struggles with the jewelweed, and finally succeeds with a buzz of satisfaction. All is grist that comes to her mill. Moreover, she is not fickle. If she is gathering pollen from the poppies she does it without a glance at the pansies; if she is working on the larkspur she does not see the honeysuckle. She lives up to her side of the bee bargain with flowers; and that is, to work on one kind steadfastly while she is working. Then, too, she learns to bear disaster when she can not prevent it. How many times it has been demonstrated during that barbarous performance of taking up a bee-tree that the little citizens of the bee commune, overcome and overwhelmed, and convinced that there is no use of fighting, have broken open the cells and have filled themselves with honey in an attempt to save what they might, and in a last effort to sweeten adversity to the best of their abilities! I fear too many of the womenkind of our own commune are given to tasting to its depths the bitterness of misfortune.

Of course, industry is a virtue, and the bee has been a shining example set up for human emulation from time immemorial. She begins her labors with the dawn, and continues them until the dark. But it is the ready quality of her industry that appeals to me. She does what there is to do. If she has to feed the children she does it cheerfully. If she has to hang up and make wax, she turns herself into a chemical laboratory with speed and dispatch. If she has to stop cracks she gathers the glue and goes at it. She shows no preference for any special duty. She does not stop to pick and choose, and she does not sulk because her work is disagreeable. All work is honorable and pleasurable in her eyes.

As a corollary to this power of labor she knows how to rest. If the day is rainy she does not fuss and fume because she can not go out. She stays at home peacefully, and recuperates so as to be ready for the strain of labor when it comes. I have known many women to wear themselves out trying to rest. I think they might learn the secret of this great blessing if they would watch their bees.

The bee is also a creature of resources. She does not have to follow the same path forever. I have seen her working with mad intensity on the scarlet sage in the autumn, for she feels it is her last chance to get nectar, and she makes the most of it. The scarlet sage is not a bee-flower. Its tube is long and narrow, and it has no doorstep; but she climbs in some way, buzzing and remonstrating because of the narrow passage as she goes. But some of the corollas of the flowers have fallen off, taking their nectar with them, and she works at these on the ground, taking the nectar from the end of the flower-tube where it was developed—a far more convenient way for her.

Right here I wish to diverge from my topic

of educating women by means of bees, and pay a little side tribute to the teacher. During the past two years I have been spending much time watching the bees working upon flowers, and I believe that the story of the partnership between bees and flowers has not yet been half told. Man thinks the earth was created for him. Why? Because he has had the ability to use the earth and the fullness thereof. It is only when cyclones and earthquakes occur, when floods or drouths devastate the land—only when the mosquitoes or the housefly brings upon him a plague, or when the gypsy moth defoliates his forest, that he questions for a moment that the earth was really planned for his own pleasure and profit. His own achievements have confused his mind. Instead of saying that the earth was made for "me" he should say, "I was meant to use the earth so far as I am able." Now, it is the same way with the bees. They are so clever and enterprising, they are such efficient opportunists, that they use many things never meant for them. Many of our long-tubed flowers were specially developed to satisfy the long sucking-tongues of moth or butterfly, or the long beak of the hummingbird. But does it deter the bee? Nay, verily! Watch her working on the nasturtium, the columbine, or the nicotiana, and then dare to say that she has not the triumphant power so honored in the human race. As a matter of fact, most of these long-tubed flowers develop such an abundance of nectar that their tubes are more or less filled with it, and the bee gets what she can by squeezing in as far as she can. And the beauty of it is, she pollinates these flowers quite as efficiently as do the insects for which the flowers were developed. This readiness to make the most and best of every thing is certainly one of the qualities we should attain, even through long striving.

But perhaps equal-suffrage woman has most of all to learn from the bee, for the bee republic is governed by the laws feminine, and what a wonderful republic it is! There the citizens do all the governing without voting; there the kings are powerless, and the queen works as hard as and longer than any of her subjects. Surely the pages of human history contain no account of a republic as wonderful as this. The first thing of all which characterizes the bee republic is the rule of the majority with no minority reports, with no rebellions nor secessions, and the reason for this unanimity is because every citizen in the community is doing what is best for that community, and thinking about nothing else. The bee citizen surely exists for the sake of the bee republic; and, reciprocally, the bee republic exists for the bee citizen. It is my own conviction that my equal-suffrage friends have a most important lesson to learn at this most critical moment when their demands for the ballot are so likely to be granted, and nowhere can they learn this lesson so surely as from the citizen bees. We Americans who love our country have

looked long with misgivings on a citizenship that was gained with so little knowledge of what citizenship means, and with no guarantee of responsibility toward the duties of citizenship. An almost unrestricted suffrage is the great problem that confronts us to-day.

That masses of ignorant foreigners are emptied out of political sacks upon our poor long-suffering polls in numbers that seem likely to smother both patriotism and honesty, is certainly not to the credit of our laws nor our law-makers; and yet the equal suffragists, among whom I have many friends, tell me they wish a vote quite as unrestricted as the present one. The only argument they make is that, since ignorant men vote, why should not ignorant women vote? In other words, the men have made a great mistake in managing our country, therefore let us multiply it by two. Now, a bee citizen would not for a moment be led away by an argument like this. She is not interested in any thing but the good of her community. The privileges of her sex that would endanger her commune she would scorn. She is a patriot and a citizen, first and always. I wish that the equal suffragists would become sympathetic and enthusiastic bee-keepers. I do not know of any other training that would so benefit them or fit them for the duties of citizenship.

In the bee commune there is no voting nor any blanket ballots, nor any corrupted ballot-boxes. Why? Because a bee elects herself to office as soon as she sees that a thing needs to be done. If we all knew as well as the bee does what is good for our nation, and if we should do it with such enthusiasm and unselfishness as characterizes her acts, we should have the millenium, and governments would be done away with as entirely superfluous encumbrances.

When it comes to the home industries, the bee is again a model. She is always a good housekeeper. She sees that the hive is kept clean, that being one of her first duties. There is another one of her house-keeping qualities which I am sure if we should adopt would go far toward solving the servant question. She knows how to do a part of a piece of work, and then trust it to her sisters to finish. She does not feel that she must stand by and boss the job to the end. She does her own part of it just as well as she knows how, and she expects the others to finish it in a like manner. She does not insist that her own notions be followed in the smallest particulars. She comes in some day with a load of wax, and begins making comb. She puts a piece in place, molds it, makes it properly six-sided for a little space, and then what does she do? Does she stand off and look at the next sister that comes with wax? Does she tell her, "Now put that right here, for this is where I left off"? or, "be careful! you are not getting it straight"? No, indeed. She knows that responsibility is the best teacher; and if that will not develop the right kind

of industry, then nothing can. When the woman in charge of the home demands of her servants results, and does not stand over them, nagging them to make them do their work in her own way, she will then have taken a step further forward in solving the almost unsolvable problem of domestic help.

The bee is an excellent stepmother or nurse, or whatever you may choose to call her in this particular office. She attends to the bee babies with great skill and care, although perhaps the ant is her superior in this respect. But she feeds the young on the best kind of food, preparing it for them according to their age and needs. She keeps them clean, carefully watches their development, and when the time comes she caps their cradles. Although they are not children of her own, she knows how to make them comfortable; and her instincts seem to be quite on a par with the mother instinct of which we, as human beings, are so proud in our own race.

Then I should like to say one word about the bee as an artist. The ancients and also the great mathematicians of all ages have written poems and treatises on the building and the perfection of honey-comb. I never take a piece of this exquisite structure in my hand without admiring it; yet there are those those who dare to assert that this perfection of structure occurred by chance! They dare to say that reasonably perfect, alternating, rhombic pyramids, which form the base of honey-comb, are fortuitous. It may be that the angles of the cells are not always exactly perfect; but this proves nothing against the mathematical prowess of the worker bee. It simply proves that she is a practical builder. She is working for the good of her colony, and is not willing to sacrifice every thing for the sake of mathematical precision; and in every case she has proven better than any other creature, excepting man, that economy of storage room for liquid contents, building materials, and mathematical formulæ may coincide. In fact, she has demonstrated in a beautiful way how fundamental and how divine is mathematics. It always touches my imagination that this little winged creature has such a sense of symmetry and beauty. And then her love of color—but that is another story which I have not time to speak of to-day, but which any one may read for himself who will follow the bees about the garden.

The bee must also have some worthy object in life outside of herself. She could never be content to gather nectar simply for her own food; she could never waste her days preening her own dress, nor spend her afternoons playing bridge. As soon as she finds she has nothing to live for outside of herself and her own personal interests she lies down and dies. It is surely enough to touch the heart to witness the immediate change in the attitude of a queenless colony when a frame or two of brood are given them. Their buzz has an entirely different

sound, and their attitude is changed from listless irritability to an intense and happy interest in life.

Now I have spoken something about what a woman *can* get out of bee-keeping, and I will turn my attention for a moment to those things she *does* get out of it. I have watched with interest several women who were successful bee-keepers. Once a man said to another, "I have not met with success in my work," and the other answered, "No one ever *meets* success. If we ever get it we must overtake it." That is what these women have done. They have overtaken success by fair effort, but they did not become breathless meanwhile. Some years they clear a fairly good income, and are very happy over the money earned in a work so interesting and agreeable. This income varies from twenty-five to two or three hundred dollars per year, depending upon the season and the size of the apiary. I have never had a personal acquaintance with a woman who was making her living and supporting her family by bee-keeping, although I have heard of several who do this. In the case of my acquaintances, bee-keeping is a blessed avocation, and I believe that as such it fulfills its highest benefit to women.

It is true that in our farming communities the women get too little of the life-giving air of the out-of-doors. The city boarder comes and stays outdoors all day swinging in the hammock or taking long tramps over the hills; and she sleeps outdoors at night, if possible. But this proceeding seems hardly decent in the country community where I was born and reared. It seems idle to waste one's days in a hammock, and it seems almost scandalous for a woman to be able to walk ten miles. The farmer's wife spends most of her days indoors, and her nights in a bedroom where drafts are not allowed. (By the way, how much she ought to learn by watching the work of the bees in setting up drafts through the hive with their fanning wings!) It is only because there are some duties which invariably call the women of the farmhouse out of doors that keeps them alive. I have often thought that the unhandy well, four or five yards from the kitchen door, has saved the lives of the women who work in the house.

Now, bee-keeping gives the women of the farm home a reason for being out of doors, and at just the season when the world is most beautiful. Moreover, the apiary is always in a pleasant place. One thing which always holds my attention is that, however unattractive the surroundings of the farmhouse, the bees have a pleasant corner in the orchard, or in some other partly sunny spot. Whether they know it or not, the women of the farm home who care for the bees get some good air and some good healthy outdoor labor, and meanwhile they are not troubled with insomnia. How many a country wife has wondered and resented during her sleepless hours the sound and

perfect sleep of her husband when the only reason for this difference lay in the fact that his work was in the open air and hers in the stuffy house.

Then there is another and even more fundamental reason for bee-keeping as a woman's interest. I would prescribe as a means for preserving sanity and sound nerves to the wives and mothers of this country that they each have some avocation which may be pursued steadfastly, even though interruptedly, and that it should be quite apart from household duties. Such a work clears the mind and temper of tangles. It is like the shadow of a rock in a weary land. Half the worries of life crawl away out of sight the moment we really drop them; and often, if we find them again, they seem to have shrunk. There is something nerve-exhausting about the daily treadmill of household drudgery. It always wears on the same nerves; the collar of the housework harness always chafes on the same sore spot. An avocation gives a chance to throw off the collar and give the collar-galls a chance to cool and heal; and bee-keeping is one of the sanest, sweetest, and easiest of these nerve-healing avocations. It is worse than useless for a woman to carry the irritation engendered in the hot kitchen into the apiary, for no living creature is more sensitive to an irritable frame of mind than is the bee; and her way of showing her consciousness of it surely makes the punishment fit the crime. A bee can not be scolded, spanked, nor kicked. The only way to deal with her is to keep the spirit calm and peaceful, the temper self-controlled and equable; and thus it is that the mere work with bees becomes a means of grace.

And, finally, in my judgment, it is bee-keeping as an avocation that is, after all, the most important reason why there should be women bee-keepers. The honey and the money they gain from it are simply useful and welcome incidentals gained while they are laying up health and strength, and cultivating a new interest in life, and gaining in perception and love for God's wonderful world.

BEE-KEEPING IN FLORIDA.

Some Representative Bee-men of Florida.

E. G. BALDWIN.

Continued from last issue.

All along the western coast of Florida, below Tampa, a chain of keys encloses a series of broad bays wherein flows the salt water of the sea, quiet and serene, secure from the winds and waves that often lash the great gulf just beyond the keys. Most beautiful for location on one of these keys is the home of Mr. Isaac T. Shumard, of Osprey. His home is on Cassey's Key, one of the longest in all that region. He is 82 miles below



Fig. 7.—Mr. Shumard and his daughter Florence in one of the outyards.

Tampa. Mr. Shumard is one of the "salt of the earth." He is 62 years young, still sturdy and active, loves young people to devotion (and older ones too), and he loves the outdoor life of the frontiersman, and has much of the spirit of Daniel Boone in him. From boyhood he has loved the bees, and seldom has been without them. Genuine, irresistible hospitality is the spirit of his island home. He has about 200 colonies in 5 apiaries, which he has located on bays and inlets and streams along the mainland in order to make them accessible by his gasoline-launch and lighter. He visits all of his yards in his boat, carrying his extractor, barrels, etc., from one to the other. The writer helped him to extract nearly 1000 lbs. from one of these in a few hours—the whitest honey he has ever seen in Florida. His home apiary (see Fig. 10) he devotes exclusively to rearing queens for early needs in the North.

His present location, too, is unsurpassed for correct mating, as the mainland is nearly a mile away, in a bee-line, and few queens



Fig. 8.—Mr. Shumard's ant-proof honey-house.

fly over that stretch of water on their nuptial flight. For 13 years he has kept bees in Florida, seven of them being in his present location. He says that five dollars would cover the cost of doctors' bills for himself and family in all that time. His family, by the way, consists of eight. He has the only really ant-proof honey-house in the State, so far as I can judge (see Fig. 8). It is located over the water, and approached by a 150-foot walk. The only objection to the location of the honey-house is that the salt sea-water quickly corrodes any metal surfaces. He also uses the ten-frame L. hive and produces extracted honey only.

His honey-sources are chiefly saw palmetto, cabbage palmetto, and fall flowers. He comes as near to producing an absolutely pure article of palmetto honey as it is possible to secure anywhere. The flavor and

color of the palmetto honey that he secures are exquisite and striking. He has no orange honey; suffers heavily from forest fires, as the cattlemen own that part of the country, and their roaming herds are everywhere, for which they burn over the flat woods or palmetto hummocks as often as they will burn. Fortunately it will not burn every year.

Mr. Shumard's hive experiences have been varied. He began with the old American (pictured in GLEANINGS, 1910); soon changed to a hive called the Buckeye (a local name), then to the so-called Hoffman hive (not that of the Hoffman frame); finally he adopted the L. hive as best for all purposes. He uses the narrow top-bars, however, from long familiarity with their use. Friend S. uses only two-story hives in all of his outyards because he thinks that

more stories do not permit sufficient bees to fly abroad, but keep them at home caring for the piles of supers, etc. In this it seems to the writer that he makes a mistake; for in the season of 1910 he had many of his outyards fill their hives "chock-a-block" with honey, and then swarm and go. More surplus room, even ahead of needs, would have obviated this loss.

He is also a genius at getting full sheets of worker comb from mere starters of foundation, and with no splints. I have never seen truer combs nor more regular cell structure than is visible in his hives, and secured without foundation. His secret is to place the frames of starters in small colonies, or in newly hived swarms. He uses no wires, but has never had a comb breakdown in extracting, nor melt down with



Fig. 9.—A few of the bees from one of the hives of I. T. Shumard.



Fig. 10.—I. T. Shumard's queen-rearing apiary on Cossey's Key, off southwest coast of Florida, 82 miles below Tampa, in "Palmetto Paradise."

heat, in any yard. A stalwart son and son-in-law help him in his most strenuous seasons, and not least of his assistance comes from his active daughters, especially Miss Florence, who is shown with her father in an out-apiary, in Fig. 7. All the views of Mr. Shumard's apiaries were taken by his old-time friend Mr. M. L. Brewer, of Philo, Ill., called (and justly) "The Camera Fiend." They will rank among the clearest photos ever taken. Mr. Brewer is also a bee-keeper of note. The writer is indebted to him for part of these views.

De Land, Fla.

To be continued.

[The above interests me particularly because it describes so well the island home where I passed two winters, and the spot I have written so much about in our previous issues. I am afraid, however, it presents almost too bright a view of that locality. Although friend Shumard has on the whole been fairly successful in bee culture, he has had some severe drawbacks. When he undertook to raise queens on the island, three serious obstacles stood in his way; namely, the queens and bees fell into the water while they were continually crossing to the mainland. Another was the ant nuisance unless he kept a hundred chickens or more to keep them down; and, lastly, the dragon-fly, although the latter come only occasionally. There have also been long periods of drouth. No doubt many of our readers will recall that two of the pictures given were also in

our issue for July 15, two years ago. It may be well to read up the descriptive matter given there while the above account of Bro. Shumard's island is before you.—A. I. R.]

SHADE NEEDED MORE FOR THE KEEPER THAN FOR THE BEES.

A Portable Tent for Use in the Apiary; the Secret of Avoiding Robbers.

BY G. C. GREINER.

In former articles some of our bee-keeping friends have expressed their views on the shade question. Some are in favor of shade, while others claim that bees will do better when exposed to the all-day sun. I can not take sides with either party. I don't believe that shade or no shade has any thing to do with the yield of surplus honey and the general welfare of a colony, providing the shade is not too close.

If an apiary is located in an apple-orchard, or under trees of any kind that are well trimmed below, so that bees can have the benefit of a few hours of morning and evening sun, especially the stimulating rays of the former, I should consider it an ideal location. But if placed in the open I should consider it necessary to have the top of the hive protected against the piercing rays of the noonday sun. This may be either a temporary arrangement, like laying a board



FIG. 1.—G. C. GREINER UNDER HIS PORTABLE TENT.

Mr. Greiner has kept apiaries many years under orchards where part of the hives were exposed to the hot sun, and he has never noticed any difference in results. However, his covers are double with several inches of space between.



FIG. 2.—G. C. GREINER LOOKING FOR A QUEEN.

on top, or a permanent device derived from the peculiar construction of the hive. The hive I use has a properly constructed flat cover (sometimes called honey-board), the usual bee-space above the main frames; and over this, resting on cleats, a telescope cover with several inches of air-space between the two. This forms a positive protection against the melting of combs, and also against the detrimental effects of frosty nights.

Until last spring, when I moved my bees to their present location, I always had shade for them. Although I have moved my bees several times, I was always fortunate enough to have apple-orchards I could use as a bee-yard; but at the same time, in placing my bees at the desired distances, some of the rows or parts of them would have to take the all-day sun. As much as I watched the result I could never notice any difference in the yield of surplus honey. I had extra heavy yields in the shade and extra heavy yields in the sun, and light yields in both places. It seems to make no difference with the bees. They thrive in one place as well as in another; but with the apiarist, who has to do the most of his outdoor work during the hot summer months, it is very different. A little shade, when the thermometer hovers around 85 and 90, is very acceptable.

My present bee-yard is destitute of all shade. I have planted an orchard on the ground, but it will take many years before any shade from that source will be available. To make up the deficiency in a small way, I have constructed a little tent frame and covered the same with a canvas roof. Fig. 1 shows the writer taking his noon rest and

watching his bees in the shade of his tent. The whole structure is very light, and can easily be carried to any place in the yard. It is six feet long and takes in two hives, furnishing a shady place for the operator and the colony to be operated on. While it would not be practical to move the tent with us at all times and for all kinds of work, it would be quite an acceptable acquisition in certain cases, when longer jobs at single hives take up our attention. In Fig. 2 the writer is looking for a queen among a row of nuclei.

HOW TO AVOID ROBBERS, EVEN WHEN THERE IS NO HONEY-FLOW.

The tent, as it is, is intended for shade only; but by providing an adjustable curtain of cheese-cloth, or a similar material, it could be easily transformed into a bee-tight beentent. But I never had any use for any thing of the kind. No matter what my work may be, by being very careful about leaving any temptation on the ground I have very little trouble with robbers. Even in September I extract buckwheat honey and leave the doors of my honey-house wide open. Of course I have screen-doors, which I keep closed; otherwise I should very likely be troubled with some undesirable company. The secret in preventing robbing with all our outdoor work is simply this: "Don't give the robbers a taste." When taking full combs from a hive I make every move count. I do it as quickly as possible, in a sort of sleight-of-hand way. The few robbers that are following me up hardly know the hive is open before the combs are in the bee-tight comb-basket and the hive closed again; and those that are a little too inquisitive, and follow the combs in the basket, are

caught by closing the lid. I take them with the combs to the honey-house, where they are kept prisoners until I get through extracting for the day. By picking up what robbers I can with every basket I carry to the honey-house, I keep the yard quite free from these pests.

The question would naturally arise, "What do you do with those indoor robbers? how do you dispose of them?" Simply by opening the screen door wide, past the center when I see fit to liberate them. I have no bee-escape to my honey-house, and would not have any under any consideration. To let the bees pass out at any time by means of one of these devices is just exactly what causes trouble. They will soon return and bring another lot of investigators with them, and, before many hours—yes, minutes—my honey-house would be surrounded by a very troublesome crowd. But under the circumstances Mr. Robber has to stay in until it suits my purpose to set him free, thereby preventing all communication between him and the outside world.

My screen-doors are the only bee-escape I use, and they work to perfection. The frame is made of $1\frac{1}{2}$ -inch stuff, and fits to

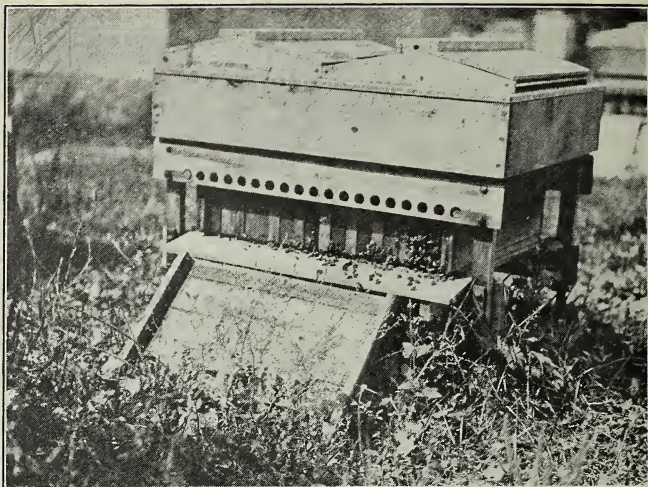


Fig. 1.—One of S. D. House's colonies, in an Aspinwall hive, that produced 120 lbs. of honey without offering to swarm.

the door opening on the outside. It forms, with the screen nailed on the outside of it, a sort of inclosure which confines the robbers to the screen, even when the door is partly opened. This enables me to pass in or out, or move my comb-basket one way or the other without a single robber taking the hint that he could gain his liberty by taking the right course.

But I have another scheme of deception. It sometimes happens that the inside robbers have become quite numerous, and attract a large number on the outside—too many to make the passing in and out agreeable. Then I use a second door about three or four feet from the screen. Being a solid door, always closed when not used, and opening on the opposite side from the screen, not a single robber molests me when going in or out with honey or empty combs. The screen being so near it draws their attention in that direction.

My comb-baskets, when taken to the honey-house with full combs, are always placed near the

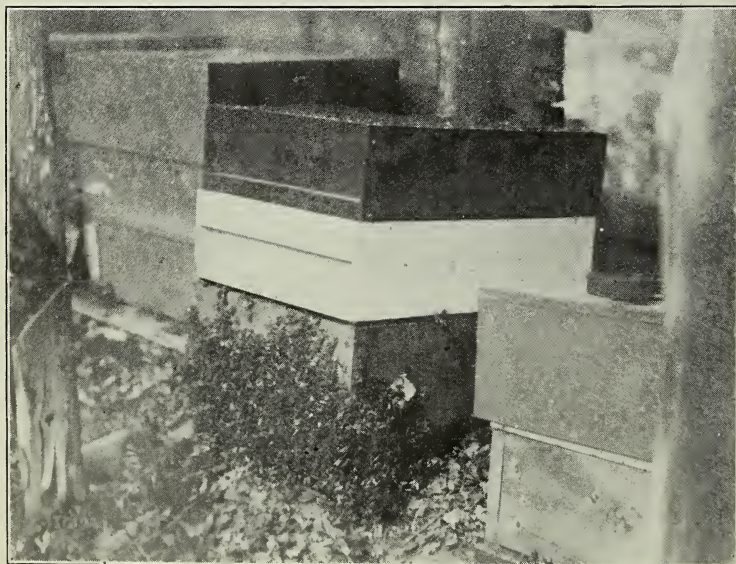


Fig. 2.—Bees actually suffering for want of ventilation.



Fig. 1.—Apiculture, short course, Ontario Agricultural College, May 1—6, 1911. Taking winter packing off the hives.

screen; and as soon as the lid is raised, almost every robber will go to the screen. Not one in a dozen will alight on the windows, although some of them are as near as the screen-door. Thus when the screen-door is swung open for the purpose of general liberation, hardly a bee is left inside, and no other bee-escape is needed.

La Salle, N. Y.

ENTRANCE VENTILATION DURING WINTER.

The Advantage of a Double Entrance, One on Each Side of the Hive.

BY S. D. HOUSE.

If we observe the condition and position of bees clustered for their winter sleep out of doors we shall always find them clustered close to the open entrance at the beginning of winter, and they will not abandon that position except to follow up their stores. If we close the entrance three-fourths its length on one side, say the first of November, the bees will cluster at the side of the hive where the entrance is open. Usually bee-keepers close the entrance from the two sides, leaving the opening at the center. As the bees will cluster at the open entrance, or in the center of the hive, they will, before the winter is over, consume the honey in those center combs. They are now compelled to move over to one side or the other, and, later, consume all the honey on that side of the hive. As a consequence starvation often takes place, the temperature being too low for the bees to move over several empty combs to get to their honey on the opposite side of the hive. If, on the other hand, the entrance had been placed at one

or both corners of the hive, such a condition would not exist.

If the location is one that is exposed to much wind, and a contracted entrance is desired, it should be closed in the center, leaving an opening at each front corner. This serves a double purpose. First, the bees will cluster at one or the other side of the hive, and, of course, will be in position to follow up and reach *all* of the stores in the hive. Many times in my early experience I have found colonies in early spring, after starting brood-rearing, out of honey in or near the winter nest. They were thus compelled to abandon their brood and move over to the honey and start an entirely new nest. Such a move takes place at a time when the bees can ill afford to stand such a loss, and many times it puts the colony out of commission for the white-honey flow to follow.

Second, a double entrance (one on each side) gives a much greater ventilation, by causing a circulation of air through the hive, than if the same space were given in one opening in the center.

I winter several apiaries outdoors with the entrance the full width of the hive— $16 \times \frac{5}{16}$, and since adopting this wide-open entrance I find the bees much stronger in vitality, and able to withstand greater hardship during the spring. As spring advances and the bees are getting frequent flights, and brood-rearing is advancing, I contract the entrance very close, usually about $2 \times \frac{5}{16}$ inch, and at no time during any part of the year, indoors or outdoors, do I give any ventilation from the top of the hive. Nature gives the bee instinct to glue every crevice air-tight, and I believe in clinging close to nature and assisting wherever possible. Upward ventilation will do no great harm at the time

the bees are in their winter cluster; but usually when a cushion is used during the winter, with more or less openings, it is left on during the breeding season, and after the bees have broken their cluster. At this time an upward ventilation is a drawback to the colony, as

it allows too much heat to escape, and also takes from the colony the control of temperature within the hive. On the other hand, if the cover is sealed tight, and the temperature rises too high within the hive, the bees will drive a circulation of air through the hive by fanning.

How many times we have seen bees gnawing the hive at the entrance to make the opening larger, that they might get more air; but I have never known them to gnaw the crevices of wood at the top of the hive. Invariably they will glue them tight if the opening is less than a bee-space. I think this proves that bees do not require an upward ventilation.

The past four years I have had under observation the Aspinwall hive and its con-

struction with its many bee-space dividers, which also act as air-spaces, giving as much area and air to the bees as the combs occupy during the honey season; and the result is that no one queen can overstock the hive with bees, and there is no time during the hottest days of summer, with approximately 80,000 bees, that they show any signs of a high temperature within the hive. These many ventilating spaces make it a practical non-swarming hive by removing two factors which are most conducive to the swarming impulse—first, a crowded condition of the hive by the bees, which closes the bee-spaces between the combs and shuts off the ventilation from the larvæ and embryo bees. Second, this crowded condition of the hive raises the temperature of the brood-nest

above a normal temperature, which forces the bees to cluster outside of the hive in idleness to prevent the brood from suffocating. Fig. 1 shows a colony in an Aspinwall hive that produced 120 pounds of comb honey without offering to swarm. All colonies that are in prime condition June 1 should have a large entrance; and, if given in time, it will reduce the swarming impulse to a minimum. There is no one cause more conducive to the swarming impulse than a lack of sufficient ventilation. Fig. 2 shows a colony actually suffering for want of ventilation.

Many times a swarm will not stay in a new hive, especially if the frames are filled with full sheets of founda-



Fig. 2.—Apiculture, short course, Ontario Agricultural College, May 1–6, 1911. Three groups of hives unpacked.



Fig. 3.—Apiculture, short course, Ontario. Looking for foul brood.

tion. They are effectually controlled by placing an empty super under the hive-body for 36 hours, when it must be removed or they will build combs below the frames. I have practiced this method for some years, and have never had a swarm issue when an empty super was underneath the brood chamber. It provides an air-space and also a place for the bees to cluster below the frames while they are transforming their honey into wax.

Camillus, N. Y.

THE SHORT COURSE IN APICULTURE AT THE ONTARIO AGRICULTURAL COLLEGE.

The apicultural short course, May 1—6, which was the first short course of its kind ever held at the Ontario Agricultural College, was a success. In all, 43 bee-enthusiasts were in attendance, including eight regular apicultural students of Macdonald Hall, and six ladies from different parts of the Province. The counties represented were the following: Bruce, Carleton, Dufferin, Elgin, Haldimand, Kent, Lambdon, Leeds, Lincoln, Middlesex, Perth, Stormont, Welland, Wellington, Wentworth, York, and the Province of Quebec. Nine of the sixteen Provincial Apiary instructors were present, also Dr. G. Gordon Hewitt, Ph. D., Dominion Entomologist, and his assistant apiarist Mr. Beaulne, of the Central Experimental Farm, Ottawa.

The program consisted of forenoon devoted to lectures, the afternoons to demonstration and practice, and the three evening lectures of a more popular nature, copiously illustrated with lantern views. The weather being cold most of the week, the practical work took the form of demonstrations in the apicultural laboratory—rendering wax from combs, nailing up hives, nailing and wiring frames, and putting in foundation, etc. A rather complete display of different kinds of combs which bees build, also of machinery used in the production of honey and beeswax, attracted much attention.

By Thursday it was warm enough to visit the college apiary. The hives were still in the boxes where they had been packed with planer shavings for the winter. These boxes were taken off by members of the class, and stacked; the shavings were removed, and the class was given a drill on handling combs and looking for different conditions of the internal economy of the hive. Friday afternoon was spent in a similar way, giving more attention to the symptoms of American foul brood. Saturday morning local apiaries were visited, and some members of the class became discoverers of real causes of disease, much to their own satisfaction.

The lecture work was divided largely between Mr. Morley Pettit, Provincial Apiarist, and Dr. E. F. Phillips, Ph. D., in charge of apiculture for the United States. Mr. Pettit handled the more practical problems of apiculture, and Dr. Phillips discussed the question of general behavior, anatomy, and

disease of bees. Professor Edwards introduced the subject of diseases by a general discussion of the nature of bacteria. Prof. Harcourt demonstrated simple chemical tests for the purity of honey. Prof. C. A. Zavitz explained the work of the Ontario Agricultural and Experimental Union, and suggested ways in which it could serve the bee-keepers of Ontario in addition to the work already done. Mr. LeDrew explained the principles of coöperation which might be applied to the business of honey-production.

The evening lectures by Dr. Phillips, entitled "The Behavior of the Bee," and on "The Hawaiian Islands and their Bee-keeping Industry," were largely attended by members of the Normal Teachers' Class, and the students of the O. A. C. and Macdonald Hall. At the Friday-night lecture, President G. C. Creelman, B. S. A., LL.D., occupied the chair in his usual genial manner.

There were many expressions of appreciation from the members of the class as they dispersed to their homes on Saturday, May 6th.

SECRETARY.

SMOKING BEES AT THE ENTRANCE.

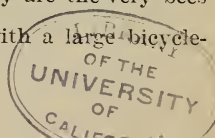
Does it Pay at Any Time?

BY S. D. CHAPMAN.

[Mr. Chapman is one of the leading bee-keepers of his State. He is a successful farmer and a bee-keeper—one who knows how to economize his time to get results. His views on any subject deserve careful reading.—Ed.]

It has been but a short time since the editors of two of our bee-journals told us why bees fear smoke, and I hardly think they agree. It seems to me an easy matter to find out why bees fear smoke. Take a four-inch smoker; and when it is going nicely, if we would hold the nozzle close to our face, and pump vigorously, and wish to get the best results, we should open our eyes and mouth. It will take but a short time to convince us why bees dislike smoke, but I am not advising any one to try this. Smoke has the same effect upon our bees that it has upon ourselves. If we administer the same amount of smoke upon our hands we would scarcely notice it. That is why I believe the first move we make about a colony is for the purpose of bringing as many bees as possible facing us, ready for the first puff of smoke. We have all noticed that, during cool and windy weather, it is difficult to handle bees though we use a large amount of smoke. It is my opinion the whole trouble comes from the sudden change of temperature inside the hive. The instant we remove a cover, the heated air escapes, and there is a draft of cool air coming in at the entrance, though it affects only the outside of the cluster; but they are the very bees that attack us.

One cool morning, with a large bicycle-



pump I put a little cool air in at the entrance of a colony, and it made them wild.

In regard to smoking bees at the entrance, I wish to refer to Dr. Miller's comments on smoking at the entrance, in the *American Bee Journal*, page 134, where he says, "If the sum total of smoke be the same in each case, will not the interruption and confusion be the same?" I can not quite agree with Dr. M. in this case. A little further on he says, "If I am correct, when a hive is jarred the bees come out at the entrance to attack the disturber, and a little smoke at the entrance quiets these guards." The way I handle bees, I have failed to discover that jarring has any effect on a colony; and it is seldom that any bees come out at the entrance to attack me, and I use no smoke at the entrance. I am referring now to the time when it is warm, and at least a little honey is coming in.

Let us take two colonies with the same disposition. One we will smoke at the entrance. The first puff of smoke striking the guards in the face turns them end for end, so they start for the inside of the hive, and they start roaring, which excites the whole colony. If we give them any more smoke at the entrance we drive the bees to the top of the frames; and when we remove the cover, for every puff of smoke given at the entrance we must use two to drive the bees down. We find we have made bad work of it; and the result is, we have destroyed the benefits of a quick observation to determine the true condition of a colony. A man with a few colonies can get along almost any way; but the one with several hundred must cut out unnecessary work.

Let us go to the other colony. It is better to approach it in a way so the guards will not discover us. We place a hand on each end of a cover, and it comes off quickly. How do we find them? No bees are coming out at the entrance to attack us. Why? Because the first disturbance is above them, attracting their attention to the top of the hives. They are crawling toward us, and we have all the bees facing us ready for the first puff of smoke. We can now judge the true condition of a colony. To explain this more fully, let me show you how I go through 100 colonies in one hour, just to find out their condition. I believe I have examined 100 colonies in 30 minutes. It is only once in the season I do this. Some may think it is not advisable to do this, but it pays me. The first time I go over my bees in the spring is only to scrape the under side of the covers and top of the frames.

The second time, I choose a warm day about the time fruit-trees are coming in bloom. I do not take out any frames nor do any work with the colonies, but find out their condition. First, if there is a colony that has lost its queen during the winter or early spring the bees show it the instant we remove the cover. Second, we look for young bees. Third, one puff of smoke over the top of the frames starts the bees downward, and we look for sealed honey. Fourth, the con-

dition of the colony regarding its strength. Fifth, the record. This record is worth to me ten times its actual cost. In going over these colonies we use no smoke at the entrance. We have the smoker going; and when we come to a colony we set the smoker on the ground, using both hands to remove the cover, and with one hand we bring the cover in front of the hive, striking one corner on the ground, dislodging all the bees from the under side of the cover.

At the same time, with the other hand we bring the smoker just above the hive and give them one puff of smoke to start the bees down. The hive has not been open more than six or eight seconds to find out the condition of the colony. We put the cover on just as quickly as it was removed. There is not a bee in the way, and this cover sometimes comes down with quite a little jar; but bees seem to pay no attention to such jarring. One or two puffs of smoke at the entrance will cause more excitement than a dozen such light jars.

When the cover is on we place a brick on it, and this brick we use to keep the record. If the hives face the east, and it is a strong colony, we place the brick on one edge so the ends point east and west; for medium, northeast and southwest; and if very poor, the ends of the brick point north and south. When it is time to put on the first upper stories I can go near the middle of my home yard, where there are 175 colonies, and I know their condition just as fast as the eye can catch those bricks, and we have to open only the strong colonies. Later in the season, when the first upper stories are partly filled, by observing the bees at the entrance I can tell almost every colony that will soon need more room.

Mancelona, Mich.

[Our views are given in part on this subject on page 384 of our last issue. Our correspondent raises the question whether it *ever* pays to use smoke at the entrance. This is a good subject for discussion. Let others join.—ED.]

MORE ABOUT WINTERING A SURPLUS OF QUEENS IN ONE COLONY.

It is Worth a Trial.

BY G. W. JOICE.

In GLEANINGS, page 221, April 1, many readers perhaps noticed a communication from the writer concerning the problem of wintering a surplus of queens in one colony. The many queen-breeders who have written me for further particulars will find all my answers in GLEANINGS, as I can not reply to these questions by mail.

To start in at the beginning, I try to raise a surplus of queens after the main honey-flow, or in August. I introduce these queens to nuclei, giving one to each nucleus. This may be done by feeding a little syrup, and I think it is safer to fill the bees in the

nuclei, as they are more likely to accept a stranger when they have full stomachs. Keep these queens in their respective nuclei until after any possible flow of nectar, no matter how light, for after a flow the bees destroy all surplus queens unless they are fed each day, which is impossible through the winter.

The catch is here, and perhaps this is where followers of this method may fail. I take these nuclei (which should be on one comb each) and shake before a hive containing strange brood, and enough honey for their winter stores. Shake all the bees and queens together in one pile, and sprinkle them with a handful of flour, using no smoke. In this way they become mixed and lose their scent. I do no stimulative feeding the week before uniting, and none after. If I succeed in getting the queens accepted I have a clear track. This method requires patience. I had a few colonies that would kill every queen but one. I do *not* know whether my success (?) was due to my care or whether to the strain of bees.

Of those wintered in this manner last year I succeeded with six of the eight old ones that were in one colony; of the four old and three young ones that were together, I have the three young ones. Of the lot of young ones that were together, I wintered eight. I am not sure how many were in that colony last fall. Each spring I do my requeening two days after taking the bees from the cellar.

Perhaps those that have tried the plural-queen system through the summer without success have had the same experience I formerly had. It worked well when a good flow was on, but the extra queens would disappear between flows. This may be prevented by stimulative feeding, but it does not pay. I have never been able to carry a plurality of queens through the honey-flows, and winter them in the same colony. If Mr. A. B. Marchant, Sumatra, Fla., has small flow all winter (enough to induce plenty of brood) he ought to succeed in wintering a surplus.

Those who are thinking of trying this work next fall will do well to remember that success will not come without painstaking care in introducing the bunch of queens. Don't give it half a trial and say that it will not work. It is certainly worth a trial. Do not feed a lot of syrup after introducing the queens to the one colony. Whether you succeed or fail, write me your experiments in full.

I will endeavor to answer a limited number of inquiries that are accompanied by a self-addressed stamped envelope. To those breeders offering me queens to try this plan on their particular strain of bees, I would state that I might test it on a limited number of pure Italians. I positively will not tolerate a personal interview with any beekeeper in regard to this subject. I must refuse one and all.

Montpelier, Ohio.

MOVING 100 COLONIES OF BEES 1200 MILES.

BY WM. L. COUPER.

Complete details regarding moving bees by the carload have been given from time to time in *GLEANNINGS*; but perhaps my experience in moving about a hundred colonies as part of a car of "Settler's effects" may be of interest to some readers. The trip, which lasted about six days, was from Manor, Saskatchewan to Hatzic, British Columbia, a distance of about 1200 miles. Perhaps it was rather risky to include a cow, but it gave me a free pass to travel with the car, and I felt sure that I had the bees fastened so solidly that nothing short of an upset could release them.

The bees were confined by means of wire screen covering the tops and entrances. I did not have enough wire cloth to pack all of the colonies in this way, so over the last nine or ten hives I stapled a bottom-board, deep side down, with the entrance on the opposite end to the lower one so as to give a through draft and an air-space above. These colonies traveled as well as those covered with screen. The first row was packed against the back wall of the car, frames parallel with the rails, and hives as close together as possible. The second row was then put in place on the floor of the car, the back end of the bottom-boards touching the front end of the first row. Then a six-inch board the full width of the car was laid so that it overlapped both rows of hives, and was nailed to every second hive. Besides fastening all the hives solidly together, this plan had the advantage of leaving a clear air-space between the tiers of hives, which were packed four high, each tier being fastened in the same way. Above the hives, supers were piled to the car roof, and were also placed in front, as I wished to exclude light as much as possible. Boards were nailed across the front end of these supers, held in place by cleats spiked to the sides of the car. I used inch boards here, but 2×4 's would have been better, as they sagged considerably in the course of the trip, and one pile of supers worked loose and fell on the cow.

One rule was violated in packing bees this way, in that they were so placed that I could not get at them to give them water nor to attend to them in any way. My reason for this was simply to save space; but it must be remembered that I was shipping in cold weather, and water, therefore, was not likely to be essential. The first night of the trip, the water in the water-barrel froze so hard that it was necessary to chop the ice with an ax.

So far as the bees were concerned, the trip was uneventful. A long level run over the prairie to Calgary was broken only by the inevitable shunting at divisional points; then followed the magnificent scenery and heavy grades of the Rocky Mountains. The former, by the way, may be enjoyed from the open door of a box car far more completely than from a Pullman car, both because of

the lower speed and greater range of vision possible.

Finally, on the sixth day, when I reached my destination at Hatzic, about forty miles from Vancouver, I was unlucky for the first time. It chanced to be a very warm day, and bees from all over the neighborhood swarmed around the empty supers in the car. This excited my bees, and, I think, caused what loss I suffered. I could not get a teamster to unload the car until the following day; and by the time the bees were actually released, they had been confined in the hive for nine days. In one colony practically all the bees were dead. Two others I united with weak stocks. In all three of these colonies, heavy combs had broken, and the entrances were choked with dead bees and honey. On the whole, I think it was a very successful trip for a man entirely inexperienced in handling bees on a car.

Hatzic, B. C., Canada.

[During cold weather (cold enough to freeze) it is not necessary to use screens on top of the hives, providing you give sufficient bottom ventilation. But if the bees are liable to be unloaded on a warm day, as in your case, it is a wise precaution to have screen tops. These can be covered on the trip if a man is along and it is cold.—ED.]

THE DANZENBAKER HIVE.

Some Changes Suggested in It; the Hand Switch Bottom-board.

BY REV. F. G. RAILEY.

I am uncompromisingly in favor of the ten-frame hive, whatever may be the depth of frame. Let us have this as a basis for uniformity of dimensions. Of the ten-frame hives, after some years of experience, I have become partial to the Danzenbaker. I prefer a closed-end, reversible, and shallow frame. These features we have at least in the brood-chamber of this hive. And now let me say that my purpose in writing this is to suggest some changes in the super of this hive, and in the divisible or sectional-brood-chamber form of it which will give us the valuable advantages of the reversible feature in connection with both the shallow frames and the section-holders. With its expandable and adjustable features, so well adapted to all conditions of climate and the variable circumstances of each individual colony, so easily manipulated by any one who will give it a little care and study, I can not but believe that it is destined to become a widely used hive. It has certainly grown upon me, and that, too, when I was originally prejudiced against it. My suggestions for changes are the following, which I have put into practice now for some years.

First, make the Danzenbaker super and divisible or sectional brood-chamber just $\frac{1}{4}$ inch deeper. This will give space for a top slat on the section-holder. Then put the pivots in the center of the end-pieces of the

section-holders, and cut the cleats on which they rest down to $2\frac{3}{4}$ inches, thus making the section-holders reversible, which will give us sections of honey well finished at top and bottom, while the sections themselves will be kept clean from all stains and propolis.

Secondly, make the shallow frames $\frac{1}{4}$ inch deeper, put their pivots also in the center of the end-pieces, thus making the frames reversible, and so giving the solid slabs of brood or extracting combs which can be gotten only with reversible frames.

I have just looked over one of these sectional-brood-chamber hives constructed as above described; and, though it is only the first day of May, there are beautifully finished sections of comb honey and solid slabs of brood in the four stories of that divisible hive, jammed full of beautiful Italian bees.

One other suggestion which only those who desire need follow. It is for those who would handle these hives by the sectional parts rather than by single frames or section-holders.

Instead of the wedge-shaped strip used at the ends of the frames and section-holders, I use another cleat $2\frac{3}{4}$ inches wide. I force this down, as was done with the strip, until it is even with the upper edge of the end of the super, or sectional brood-chamber. This brings the lower edge of this cleat within $\frac{1}{2}$ inch of the upper edge of the cleat below, allowing the pivots this much play. Then with two metal thumbscrews $\frac{1}{8} \times 1\frac{1}{4}$ inches, put through the sides of the super near the end into the ends of this cleat, it is secured fast in its place; and now when the combs in the frames or section-holders are ready to be reversed, the entire section can be inverted end for end. A slight pressure on the frames or section-holders will cause them—division-board, springs, and all—to slip down, leaving the $\frac{1}{4}$ -inch bee-space above, as it should be. Thus you see the frames can be handled in entire sections if desired. The thumb-screws need be removed only when the frames or section-holders are to be taken out.

With this hive—brood-chambers, supers, all parts alike, all expandable and adjustable, each part fitting everywhere, it seems to me we shall come very near having an ideal and practical hive.

Information has been asked for as to the Hand Switch double bottom-board. On March 6 I put on one side of this switch bottom-board a good strong colony headed by one of Doolittle's fine queens. There were two stories to the brood-chamber. The colony increased rapidly under a little stimulative feeding and the early fruit-bloom. April 20, on examination I found it very strong, and queen-cells started. I at once placed the top brood-chamber, containing some drawn-out combs and foundation with some eggs, larvæ, and sealed brood, down on the other side of the bottom-board, exchanging a comb for one from the other hive-body with the queen and brood on it. I then threw the switch. I put on a super of shallow frames first, then a super of sections.

To-day the bees are working hard in both supers, there is some sealed brood and honey in the shallow frames, and some partially sealed sections of honey in the top super. Hive No. 1 is quite strong again; but I shall not make a second switch for a while yet, as I am raising some fine young queens from that colony. I think that, with proper understanding and management, the switch-board will afford many advantages. More experience, however, will be required before conclusive results can be given.

Selma, Ala., May 2.

[The Danzenbaker hive is very popular with many persons keeping a few bees in their back lots; but it does not seem to be in much favor with extensive or professional bee-keepers. While it seems to be conceded that closed-end frames are warmer, and make it possible for the brood to be reared clear up to the end-bars, the difficulty and time consumed in handling these frames appears to be a serious bar to their general introduction among the professional class.]

While there might be, perhaps, some advantage in making the change suggested, manufacturers find, as a rule, that it is unwise to make any change in hives unless there seems to be a general consensus of opinion among bee-keepers favoring such change. For instance, there has been a strong tendency of late toward the ten-frame hive of the Langstroth pattern, and at the same time a general falling-away from the eight-frame hive. It is possible to change over to ten, but it would not be practicable for a manufacturer to make slight changes in the Danzenbaker hive. The reason for this is, it would cause general confusion, in the yard of a customer who has a lot of the old hives, to buy new ones that would not fit those already in use.—Ed.]

TROUBLE BETWEEN BREEDER AND BUYER.

BY JOHN E. TAYLOR.

[The following article was written by one who, although not prominent in the bee-keeping world, is a poultry-breeder of some note, and a contributor to the *American Poultry Journal*. As his business is quite an extensive one he has had ample opportunity to judge or observe difficulties arising between customers and dealers. This opinion, coming as it does from a disinterested party, should have all the more weight.—Ed.]

In your issue for April 1, page 205, under the above heading, some pertinent questions of responsibility arise. I feel in your comment you have not touched the real issue. While it may be and doubtless is true that wired frames are best, it does not appear they were a part of the contract in question, either by direct promise or implication.

It does appear, however, that Mr. McMurray did contract, by the terms of his advertising, to sell "Superior all-over-yellow Italian bees," and then expresses surprise that his customers expect to receive such, as, in matter of fact, "we haven't got to that yet."

Now, Mr. Editor, by every statute in existence it would ordinarily be considered that

such evidence is evidence of fraud with knowledge thereof, and punishable, with power not only to recover original outlay, but to recover incidental damages for any loss of income arising therefrom. To avoid this responsibility by claiming "Golden All-over" is only the trademark of a particular strain must be accompanied by a clear and conspicuous statement that the bees advertised and sold are not yellow *all over*, but so only in *part*.

This may have been, and probably was, only an unintentional error of the advertiser; but it is a material matter, and of vast importance when considered in relation to the army of inexperienced beginners, and, in my judgment, there is but one honorable way out, and that is for the breeder to *furnish what he advertised*, free of any further expense for bees or delivery, or else refund every cent thus far paid by the buyer. This is law, and it is business.

This whole affair may be an unfortunate mistake on the part of a very honorable and well-meaning breeder; and had he assumed the responsibility for the error, and refunded the money at once, it would have been the best advertising he ever did, and would have put in your paper a letter from Mr. McCubbin that would have advertised a guarantee of fair treatment instead of a fear of broken promises.

No, Mr. Editor, I know I am inscribing pretty plain sentiments; but I don't charge a cent for them, and I am sure they are worth all I charge.

Belding, Mich.

[See editorial comments elsewhere.—Ed.]

Another Swarm that Returned to the Old Hive.

I read the article on page 377, June 15, about a swarm's queen that returned to the hive from which the swarm issued. I have had a similar experience. Last Monday, the 19th, a colony of bees I purchased this spring swarmed. I should estimate the amount of bees to be about a peck. They lit on a limb of a high apple-tree. I placed a new Danzenbaker hive on the ground under the tree, and was about to go up after the swarm when they all dropped off, and rushed pell-mell back to the old hive whence they came.

The next day, about 11 o'clock, they swarmed again. This time I removed the old hive and put in its place a new hive, placing another under the tree where they were swarming. I sawed off the limb and shook it in front of the hive. Most of the bees went in. In a few moments they came out and made for the old stand whence they came. There they found the new hive which I have already mentioned, and immediately took possession, and are now busy carrying in honey. Is this their habit, to return to the old hive?

Sherman, Pa., June 23.

E. E. LOWE.

Moving Bees a Short Distance.

In moving bees a short distance you are behind the age. I moved a yard of 50 colonies about 350 yards, 7 years ago, to rented ground, for protection and handy water. I did not use smoke, but blocked the entrances shut, and started. I used no board in front. I let them out at once and got out of the way. Not a dozen bees came back that I was aware of. I have done all moving that way since, even wheeling around the yard a couple of times and placing them on a new stand.

Portland, Pa.

A. C. HUNSBERGER.

[Wheeling the hives around the yard several times would have much the same effect as smoke. When bees are moved a short distance they must be stirred up with smoke or jarred on a wheelbarrow or wagon.—Ed.]

Heads of Grain from Different Fields

Hiving a Swarm on the Combs from which it Came.

In GLEANINGS for April 1, p. 219, Mr. W. S. Davis writes about hiving a swarm on the same combs it came from. Now, I have done the same thing, but with a little different manipulation. I allowed the swarm a longer time to quiet down before I put it on the combs.

The method I used was to hive the swarm in a new hive on starters beside the parent hive. If running for comb honey, a super may be put on at once from the old hive.

The bees should be left from 24 to 36 hours, with the idea of allowing them time to settle down to work after swarming. Now frames of starters from the new hive may be replaced by frames of brood from the old hive, one at a time, so as not to disturb the bees too much. In this way the work may be done before the bees find out what you are "up to." Then the colony is in the same condition it was in before it cast a swarm. The bees will settle down contentedly, and do as good work as if they had been left on starters. As to the cells left, it is optional with the operator whether to save them or the old queen.

After I had tried this method, three years ago, I happened to come across some of Alexander's writings, and found that he followed the same principle. Now it can be done.

CUTTING OLD COMBS DOWN TO FOUNDATION.

Here is another little kink I am practicing right along: Instead of melting up old combs I fill them with cold water; take a cold sharp uncapping-knife; cut them down to midrib, and give to a strong colony during the honey-flow. The bees will quickly clean out the old shells. A pollen-clogged comb may be treated the same way, for the bees will clean it out, thus saving the comb and making it as good as a new sheet of foundation. One may take a frame of worker comb; and if drone-cells have been built on the lower corners, cut them out and replace with foundation, after having previously cut back half an inch on one side of the worker comb so as to fit foundation to the midrib, waxing the two together. Sometimes drones may be raised on edges where the comb and foundation meet.

Heber, Cal.

M. S. PHILLIPPE.

To Form Nuclei with Virgin Queens; How to Increase by Using Virgin Queens; the Easiest and Quickest Way to Form Nuclei.

Place your hives on the stands where you want them. See that the entrances are closed bee-tight. Provide a small dish of honey, quite thin, four parts of water to one of extracted honey; and also a small dish of water, slightly saline, and set these in a hive. Then go to a hive, find the queen, and place her and three frames of brood and bees in the hive, and at the same time put in one frame of worker comb or foundation. Shut up the hive bee-tight by putting on a bag or cloth, and the board and cover on top of all. In 48 hours open the entrance about half an inch. Do this a little before dark; or if it is an out apiary, stuff the entrance with grass; and as it wicks the bees will work it out. One can put in more than one frame if desired.

Now having the nuclei fixed we will go back to the parent hive. Remove the cloth, which, of course, you have covered over the hive while you were at work on the nuclei. Take one of the queen-cages containing a virgin queen; turn the tin on top of the cage; make a small hole in the candy; put it between two frames; shut the frames together. Place in the hives some frames of worker comb or foundation—enough to fill the hive. Shut it up and leave it alone for a week or ten days. Then look and see if the queen is there. If you do not find queen-cells started, and do not readily find the queen, it is very good evidence that the virgin has been accepted all right. If you see brood, eggs, or the queen, that would be positive evidence she has been accepted. In this way you can requeen all of the old colonies. Have the nuclei of the old queens to build comb or to strengthen weak colonies, or let them build up and get whatever surplus you can from them, and unite them in the fall or keep them over as you wish. That is the best way I know to do it and lose the least time of the bees, and at the same time get young queens in place of the old

ones; also, to a great extent, to avoid swarming, or to replace an undesirable queen. You could, of course, follow this mode of procedure if you wish to do so, and in this manner requeen your whole apiary with young selected queens.

Vernon, Ct.

J. G. FRENCH.

The Basic Principle of Alexander's Method of Increase, by which the Young Brood is Saved.

I have noticed Mr. Alexander's way of making increase by dividing colonies as detailed on pages 37, 38 of his book, "Practical Bee Culture." I wish to practice it, but wish to put this question: If one has no queen for the new colony, but has desirable capped queen-cells at the time the queen is transferred, would it not be as well to give the old colony a capped queen-cell and remove it to the new location at once? If the bees on the frame of brood transferred are transferred with the queen, would not most of the other old bees return to the old location? and would not the result to both colonies be practically the same as if the old colony remained over the new one five to ten days?

This plan would be far more convenient for me, as nearly all my hives are your chaff hives with tight bottoms; and to leave the old colony above the new I would need to transfer the frames with the bees to an open-bottom hive, and, later, transfer them again to a chaff hive.

Westville, Ind.

E. S. SMITH.

[We are not sure that we understand your question with reference to the Alexander method of making increase as described on pages 37, 38 of his book. But we may say that the chief reason why Mr. Alexander put the brood above perforated zinc on top of the old colony was for the purpose of protecting the young brood, eggs, and larvæ. Where the old colony or brood is removed to an entirely different location, much of the young brood is neglected and dies. Where, however, it is put on top of another colony, the heat rising from below will protect it, and keep it so that it will be saved. The idea of the Alexander treatment is to protect and save the young brood. By taking that brood away immediately at the time of making the division you lose a large part of the larvæ and the eggs.]

If you do not happen to have a laying queen in the hive you can use desirable cells; but, of course, your increase will not be so rapid, because the colony (neither of them, for that matter) will have no eggs until the cells can hatch and the virgin becomes mated.—Ed.]

Control of Swarming by Tiering Up; a Missing Link in the Process.

In your editorial in GLEANINGS for April 15, page 234, on "Control of Swarming by Tiering Up," in which you refer to Mr. Crane's article in a former copy, it looks to me as if both yourself and Mr. Crane had omitted the most important part of the manipulation—namely, to get both comb and extracted honey from the same colony; and Mr. Wilder, page 251, has also fallen into the same error, although he does not attempt to produce section honey—only bulk comb honey and extracted.

Let me tell your readers how we do that here in the Missouri Ozarks. Along about March 1st to the 15th, when the colonies are at the height of brood-rearing, we look them over and select those which are doing the best along this line, and lift up the entire brood-chamber, and place under it another brood-chamber (eight-frame Langstroth), with frames full of drawn comb, if we have it; if not, with foundation. By April 1 this lower chamber is all drawn out, and has plenty of brood in it, with a great plenty of young bees flying all about. By the 15th of April (this year, 1911, it was a few days earlier) we alternate these two brood-chambers, putting the lower one on top and the top one at the bottom. Put on an excluding-board and a super of sections, 4 x 5 x 1½, or it may be shallow frames, and the bees *must* move up into it, as they will not allow the honey to remain so near the entrance. This is as simple as can be, and gets *real* comb honey, not "bulk," and a tremendous colony also. It prevents swarming, as there is plenty of room below after the bees have carried the honey up into the super or supers, which you may put on as these are filled and capped.

You may demur at this procedure, saying the queen will not enter the lower chamber; but, as Dr. Miller says, they will "in this locality;" and here is where we are doing business. Dr. Miller also advises putting on supers on the appearance of the first white-clover bloom, which corresponds with the date given, as we have had white clover for a couple of weeks. A queen *will* go below if she has no room above, and will enter a shallow-frame chamber even quicker than one of Langstroth-frame size, 7½ inches deep, for instance, or swarm.

But the beauty of this manner of manipulating for comb or extracted honey is in the after-workings of the colony. Along about or between July 15 and August 15, when the honey-flow is getting scarce, if we wish to increase we divide the two-story hive, putting a virgin (or otherwise) queen in one part; put on supers, and get the full flow of goldenrod, etc., separate from the clovers, which keep us going, usually, till about Nov. 15—a long season, from March 1 to Nov. 15.

Reed's Spring, Mo., April 27. N. T. GREEN.

Hemet Valley Bee-keepers' Association, California.

On May 27 the bee-keepers of this valley formed an association to be known as the Hemet Valley Bee-keepers' Association, and nearly all the bee-men in this end of the county have joined or signified their intention of so doing. The officers elected for the first year were as follows: C. J. Davidson, President; W. S. Rafter, Secretary; W. B. Tripp, Treasurer. There were also elected five directors as follows: J. A. St. John, W. H. Densmore, W. B. Tripp, C. J. Davidson, and Charles Sims. Rafter Brothers, of Hemet, were chosen as business agents.

This is regarded as a wise step by the bee-keepers, for the reason that for years they have acted individually in the sale of their honey, generally selling to the first buyer who came along and told them of the immense crops that were being made from Maine to Texas, and how cheap the article would be next week as soon as the real conditions became known, etc.

Realizing the importance of organization to get the best results from their labor, and also realizing the fact that the raising of bees and the making of honey and beeswax in this section of the country is growing each year, and would in the near future, if it does not already, cut some figure in the price of honey in California, they have decided to pool their interests, accumulate their output in one place, and advertise to the world the fact that we raise the best and purest honey to be found in our country, and endeavor to create a market for it, especially in the East.

The business managers are making every effort to reach the responsible buyers, and have already received an offer of 7 cents per lb. for the entire season's output.

Last year all of our honey was sold at 5½ cents. Our neighbors in the Imperial Valley got 6 cents for their inferior quality. They were organized, but we were not.

The conditions in our section are about as follows: The bees, as a general thing, came through the winter in good condition, there being but very little mortality, the bee-men as a rule having left them plenty of food to carry them through. The season has been somewhat backward on account of the cold weather; but the late rains were very advantageous, and brought out and kept the flowers in fine bloom; and the reports are that the bees are now working over time and making honey very fast. Should these favorable conditions last, the output will be somewhat larger than last year, and the honey will be of a superior quality, there being a larger quantity of white than we had last season.

Hemet, Cal., June 26.

W. S. RAFTER.

Carrying Queens to Outyards.

I have outyards of black bees that I wish to re-queen after the basswood flow. Queen-cells taken to these yards, as described in Doolittle's "A Year's Work in an Out-apiary," by placing the cells in a box filled with cotton, and carried next to one's person to guard against chilling the cells, would be a convenient way, but in this case it would result only in hybrid bees; therefore I wish to mate my queens at home and then introduce them at the outyards.

What I wish to know is, could I transport the queens, without worker bees with them, to the outyards by putting them into Miller introducing-cages, prepared with candy and cardboard in the

usual way, and be all ready for introducing when I reach my destination? It would be about ten hours from the time the first queen was caged until she could be introduced. To catch a number of workers, to attend each queen, and release them again at the outyards, would consume much time.

If this is practicable, at what temperature would you transport the queens? The desired temperature could be maintained by having the cages in a large box provided with ventilation and a thermometer, and a hot soapstone in another compartment.

Janesville, Minn., May 29. E. L. HOFFMANN.

[Under the conditions named, it would be more practical for you to have all your queens mated in your home yard, where you have Italian stock and Italian drones. You can then put your laying queens inside the Miller cages without any attendants, providing they did not have to stay in the cage longer than ten hours. The candy should be soft rather than hard; for without any attendants the queen might not be able to draw her sustenance from the harder candy. While the queens are thus confined they had better be kept in a temperature of approximately 98° Fahr., although they could exist in a temperature of about that of an ordinary living-room. But in arranging for the temperature up to about 98°, be careful not to get it too high, as this would do much more damage than a lower temperature. In going to the outyards we would recommend putting the cage in a little box, and the box under the vest if the weather outside is at all cool or cold. In ordinary hot summer weather the queens could be put in an ordinary box, and we would not in such a case advise the use of a hot brick. The trouble with any artificial heat is that one is liable to overdo it. The ordinary animal heat of the human body would be just about right. The objection to such heat is that it imparts an odor to the queens, and sometimes this odor might make the queen not as readily accepted by the bees.—ED.]

Will Bees Fly 2½ Miles to Buckwheat?

I live in a low round valley about five miles in diameter. Now, this is a good locality for bees during fruit and clover bloom, but there is scarcely any buckwheat raised here in the valley; but about 2½ miles away on the hills there are extensive crops of it raised. Would it do to move my bees to the hills just before buckwheat bloom? or would the loss of bees be too great to pay me?

Rohrsburg, Pa., June 12. J. A. PATTERSON.

[If the buckwheat is raised 2½ miles away from your bees, there is some question whether they would fly that far to get the nectar from it. A good deal will depend on the lay of the land between your bees and where the buckwheat is located. If you had buckwheat, say within half a mile, and another field a mile away in the direction where that other field 2½ miles away is located, the probabilities are that your bees would find that most distant field. To make sure, you had better move your bees where the buckwheat is. See "Moving Bees," in our A B C and X Y Z of Bee Culture.

The question of migratory bee-keeping—that is, moving to different sources of honey—is getting to be a rather complicated one, and a good many feel that the operation costs more than it is worth.—ED.]

Busy Bee.

Busy bee, busy bee, come and sing awhile to me
While the winds are crooning in the apple-tree;
Where the dandelion down in the grass
Tempts you oft to visit him as on your way you pass.
Sing it soft and sing it low,
Soft as the winds that come and go,
Telling of unselfishness, how to lessen wrong
By a life of usefulness—be that e'er your song.
Busy bee, busy bee, happy, glad, and gay,
Please tell us all the secret of your happy life to-day.
Busy bee, busy bee, come and sing your song to me
While the winds are crooning in the apple-tree;
Out and o'er the meadows, sparkling with the dew
In the early morning—that's the place for you.
Busy in the noontide, when the sun is bright,
Still I hear you singing, working with your might;
And in the eventide I still can hear your hum—
Laden down with nectar, back I see you come.
Busy bee, busy bee, happy, glad, and gay,
I thank you for the lesson you have taught me
here to-day. J. W. GITCHEL.

Our Homes

A. I. Root

Thou shalt love thy neighbor as thyself.—MATT. 19:19.

Love worketh no ill to his neighbor.—ROMANS 13:10.

Nevertheless I tell you the truth. It is expedient for you that I go away; for if I go not away the Comforter will not come unto you; but if I depart I will send him unto you. And when he is come he will reprove the world of sin, and of righteousness, and of judgment.—JOHN 16:7, 8.

The particular point I wish to speak on is contained in the last text, from John, pertaining to the Comforter. As I take it, the Comforter that the Master promised to send us after his departure was the Holy Spirit, or, if you choose, the comforting influences of the Holy Spirit. My dear old pastor, who has gone to his reward, used to tell us young converts in the Thursday-evening prayer-meeting that, when we are at a loss what to pray about, we should always bear in mind that we can always safely pray for the influences of the Holy Spirit. We may rest assured that God will always be pleased with such a prayer; and even when we are disturbed by a conflict of perhaps evil thoughts and feelings, we can at such a time *honestly* and *safely* pray for this same Holy Spirit. At another time I remember hearing a good elder of the Baptist Church, while exhorting us to pray for the Holy Spirit, saying that when God answers that prayer it may make us very uncomfortable, "because," he said, "the Holy Spirit when sought for and prayed for will show us our mistakes and our sins, and sometimes in a way that will make us feel very uncomfortable until we have repented and put away our evil thoughts and wrong doings." Now, please keep the above in mind when I tell you one of my recent experiences.

A month ago I started out on a trip to the "cabin in the woods" in Northern Michigan. There is a beautiful spring on a neighbor's land adjoining my own; and this neighbor was kind enough to say I might have the surplus water if I would put in some pipes and carry it over on to my land. I accordingly provided myself with some wrenches and fittings, and made a voyage safely to the old cabin. As it is about half a mile over hills and down through valleys from the station to said cabin, I found it quite a fatiguing task to carry my tools. Well, after arranging things so I could rest comfortably during the night I called on my nearest neighbor, a widow, to get my accustomed supply of bread and butter, milk, eggs, etc. I then learned she was quite desirous of purchasing my forty acres. It is mostly timbered, while she has no timber at all on her place; and she is always short of hay or land for growing it, while I had a beautiful meadow with a good stand of clover on it. To make a long story short, while my price was \$1500 she said she did not know how she could afford more than \$1350—a dif-

ference of \$150, you will notice. She said further, however, that if anybody else would give more than \$1350 she would like the refusal of it; and that, rather than lose it, she might give the \$1500—that is, if anybody else would make me an offer of \$1500.

You will notice at once that the above offer showed she had confidence in my integrity. If I were a schemer, and always trying to get the best end of every bargain, I might have planned to find somebody who would help me get my price, \$1500. I went back to the cabin, and had an excellent supper of apples as usual, that I bought in Traverse City at five cents apiece; and then I sat down to consider whether I should sell out my home in the northern woods overlooking the beautiful Traverse Bay—the home where I had enjoyed myself so much by growing beautiful potatoes, making maple sugar, beautifying and improving my woodland home, etc. I was much undecided, especially when I realized that I was getting old, and that perhaps none of the children would care for the place as a summer retreat as I had done. I looked at the tools I had lugged through the woods, and thought of the enjoyment I had promised myself in playing with that soft-water spring, etc., and I could not decide just what I ought to do. Finally I remembered seeing something in the *Sunday-school Times* that seemed to hit the present dilemma. Here it is. I want you all to read it; and after you have read it a dozen times I think it will be a profitable investment to—*read it again*.

Many of us are so uneasy until we "see the way clear" in our duty-doing that we are missing the great joy that comes to those who trustingly watch God clear the way. No matter how perplexing our pathway, how tangled and hard, God is, in every moment, clearing the way for us. We may not be able to see how he does it, or what he is doing, until suddenly the way has opened, without any stroke of ours. And then in puzzled wonder we recall that we *did* pray about that very difficulty! If only we were as eager to see how God clears the way as we are to "see the way clear," we should quietly turn to him and away from our uneasy haste and strain of vision; and, in his good time, we should see all the clear way we need to see.

By the way, dear friends, is there any other periodical in the world that has a personality cropping out in every issue like the above? If there is, I have not seen it. Yes, indeed, over and over again I have looked with astonishment to see the way open up and the coast become clear, and *then* remembering I had been praying about that very matter. But, dear friends, I am afraid that oftentimes when I pray I have not the faith to expect any such answer. I am astonished as usual when the answer comes. I got down on my knees alone in the darkness, away off there in the woods, and prayed that God would help me to decide about letting the property go—in fact, on the very spot where I had prayed much, and found

much happiness; and then I prayed, too, that the Holy Spirit would direct me in the use of my time and talents for the few years I have yet to spend on earth. Well, the answer came very soon, and there was a further answer to something I had not prayed about. I was planning in the morning to get around and talk with some of my neighbors, and ask them what the prospects were in that region for advances in the values of real estate, etc. The answer came, prompted by the Holy Spirit, as I verily believe, something in this way:

The old prophets used to put their messages in words, prefacing them by a "thus saith the Lord." Dear friends, may I take the liberty of telling you what the Holy Spirit said to me or impressed on my mind? It was something like this:

"Mr. Root, you have been all your life, or for the greater part of it, seeking to get the 'best end' of every bargain. When you have had any thing to sell, you have been all your life selling to the best advantage, as a rule. When you have bought any thing, you have in like manner taken time to see where you could get it cheapest. Admitting that there have been some exceptions to the above, is it not true that you have so far been looking out for the best end of every bargain? Now, is it not about time that you 'let up' on this planning and working for A. I. Root? In the case before us, there is a difference of \$150. Who needs the \$150 more—you or your good neighbor, who, you know, has been a hard-working woman all her life? Who *needs* the \$150 more—you or she? Would you not feel a little better about it if you were to go and tell her in the morning you have decided to let her have the property for \$1350, and that you would not take the trouble to inquire whether somebody else would make you a better offer or not?"

And I then on my knees decided I would do so; and I felt happier right away than the \$150 could possibly have made me; and as a result I kept praying that the Holy Spirit would point out more of my errors and inconsistencies, and help me for the future to lead a more consecrated life. And while I prayed, memory went back and showed me a glimpse of my own selfishness in past years that I never had before. It seemed as if my life had turned into a sort of moving-picture show; and among other things that the Holy Spirit showed up stronger and clearer was that I, the author of these Home papers, had not always been as *truthful* as I might have been. In getting the best end of the countless number of bargains I have made through my busy life, many and many a time I have not adhered to the *strict truth* as closely as I might have done. While I uttered no falsehood, I have, perhaps, unconsciously dwelt on the advantages of the things I had to dispose of, and kept still in regard to the disadvantages. I tell you, friends, it is a hard thing to do, in pushing a business of any kind, to consider the interests and needs of your *neighbor*,

with whom you are trading, just *exactly* as much as to consider the interests and needs of yourself. It is sometimes almost like pulling teeth to do this. I know, for I have had some experience since that evening when I knelt and prayed (perhaps for the last time) in that dear old cabin in the woods.

Just now Billy Sunday is reaping great rewards in the way of leading men to Christ; and the best evidence I have of the divine character of his work is that these new converts, at least in many cases, set *about* leading a new life by making good their past shortcomings. One convert who came forward, with tears running down his cheeks, started out in the new life by going to a restaurant and paying for three meals which he had but did not pay for. What would be the result if all mankind would start out with the determination to give their neighbors, perhaps not the *best* end, but a fair and *generous* end of every bargain? Why, it would be heaven in this world of ours. Years ago I bargained with a farmer for some bees. He described them as well as he could, and I agreed to pay him a certain price for them. After he got here with the bees they were so much better than I had been led to expect that I gave him a dollar more for each hive of bees than I agreed to. He went up to the bank to get his check cashed, and told the bankers my way of doing business, and asked them if they ever heard of such a thing before. My good friend the cashier, to whom I referred but a few numbers back—the man who wrote me that letter of caution—said, "Well, Mr. A., we have heard of such things a good many times with the A. I. Root Co. That is their way of doing business; and it is one of the secrets of the way in which that institution is so rapidly growing and building up."

Now, friends, do not think I am boasting because I have mentioned the above. When that picture-show of my life ran before me on the screen in the darkness while I was praying, I caught a glimpse of *that* transaction and a few others like it; but these were only *occasional* glimpses, I am sorry to say, in the panorama of my past busy life. In answer to my prayer for plain truth, the Holy Spirit gave me picture after picture of *self, self, self*. It became so painfully monotonous that I almost sickened at the sight. And then I remembered something I had heard of Professor Fairchild, who built up Oberlin College. He told us that once, in answer to prayer, the Holy Spirit gave him a glimpse of the depravity and selfishness of his own life that it almost sickened him. He said he spent the greater part of one night on his knees in contemplating his own sinfulness.

Let us consider for a moment the effect on humanity—on our own nation if you choose—if every man, woman, and child who are living under the stars and stripes should suddenly take a notion to consider their neighbors' interests as well as their

own in every transaction.* Suppose the grocer should say to himself, "Now, this poor woman needs the small margin between the buying and selling price more than I do. I ought to be glad of a chance to give her full weight, good honest measure, good quality, at a fair and liberal price." Then suppose a customer should also say, "I am owing that grocer for the necessities of life. He can not live and prosper unless I pay him in full just what I agreed to do." And, to step a little higher, suppose a dealer in real estate should say to himself, "This is a hard-working man who wants to buy this farm. I am going to tell him the exact truth in regard to it; and if he decides to take it I am going to let him have it so I can just cover expenses." And then, oh dear! what a jump it will be for the man who is employed and paid with public money! Suppose a policeman should say to himself, "I belong to the Lord Jesus Christ. I am going to do every thing I can to restrain sin and iniquity. The people have chosen me to defend their property and interests, and their health. I am going to do it honestly to the best of my ability. If tempting offers come to me in any shape *whatever*, and try to turn me from the path of duty, I am going to say, 'Get thee behind me, Satan.'"

Let us now skip on until we come to the millionaire grafters — the men who have money and property until they have no need of more and no *use* for more. Suppose these men should say, "I am getting too much money, and I am going to call a halt, and stop striving for the best end of every bargain. I am going to give orders that all of our employees shall have instructions to be more liberal in their deal with the poor hard-working people." May be it is a little out of my beat; but I would suggest that Rockefeller and Carnegie, instead of giving so much to colleges and libraries and fashionable churches, should give the poor hard-working American people oil for their lamps and stoves at a lower price. Our various strikes have drawn out the fact that, while the employers in many cases are riding in automobiles that cost several thousand dollars, many of the poor people are putting in long hours at work, with but very poor pay. It has frequently been thrown into our teeth that our United States of America, with the stars and stripes floating over us, is getting into a fashion of making our millionaires *richer* and the hard-working people *poorer*. If this is true, may God forbid that this should go on any longer. Now, a greed for money is not the only way in which selfishness exhibits itself. Let me give you a few

brief extracts from a paper called *Comfort*, published in Augusta, Maine:

I recall meeting a policeman on the streets of Denver one day who informed me a fifteen-year-old girl had been taken into a wine-room by a man.

"Why don't you arrest him?" I asked the policeman. "I dare not," was the astounding reply; "the fellow stands in with the boss. He gave five hundred to the Democratic campaign fund."

Now, that same machine was financed by the Gas Company and the City Railway, and these corporations made the dive-keepers put up as much as they could. They catered to the dive element at election time, and the policeman knew he dare not enforce the law because of the corrupt alliance. So the debauchery of that fifteen-year-old girl was the work of the business man as much as it was the work of his partner, the dive-keeper.

That's the condition in every big city where public franchises are to be disposed of. The members of the "plunderbund" let their political partner get his graft out of the bodies and souls of children and the debauchery of the home, so they can get privilege. These big criminals are to-day desecrating the temple of justice just as in Jerusalem, in olden times, when Christ went after them with a lash, and put his brand on them.

When a man who has abundant wealth—one who does not really need or have any use for more—wrongs a poor laboring man, and robs him just because he sees a chance where he can do it safely, we call him greedy and selfish. We sometimes call him a "hog," if you will excuse such a slang phrase; but I am impressed that this is a slur on the poor dumb brute that is not as bad, really, as his human rival in greediness. Well, such a man is a sad picture of selfishness, I admit; but how does he stand compared with the man who deliberately coaxed that fifteen-year-old girl into a wine-room that he might blast for all time to come that innocent and confiding child life? If the man who wanted *more money* was selfish, what shall we say of this one who does not hesitate to trample under foot this child, just budding into womanhood, simply to gratify the lowest and most degrading passion that ever cursed humanity? What words can be coined to express the estimation in which such a man should be held by all good men and women? That impulse, planted within us by the great Creator, pertaining to motherhood, and giving life to all future generations, should be regarded as the most sacred and solemn part of our being. If this is true, think of the awful sin, in God's sight, of prostituting this holy impulse, and making it the means of contributing to the lowest passions and temptations that ever beset humanity. The commandment that forbids sin of this kind comes directly after the one that reads "Thou shalt not kill."

After rising from my knees up in the cabin, I went to bed. It was not a soft bed. It was not by any means such a one as Mrs. Root provides for me, with a soft mattress, clean sheets, etc. But, notwithstanding, I lay there very happy. All the beautiful old hymns that my father and mother used to sing to me in my childhood came back with new and wonderful beauty. They went before me like the panorama of the picture show. The wild birds of the woods outside contributed their "chant," as they called to

* You will recall that, on the day of Pentecost, as described in the fourth chapter of Acts, they were so filled with the Holy Ghost that selfishness and self were almost forgotten for the time being. It is a sad reflection on humanity, however, that an Ananias soon got in among that little flock; and it is sad, also, to contemplate the Ananises who are just now being held up to light where our law-makers convene at the capital of our State. Should they receive a like punishment for their perfidy that did Ananias of old, it might result in a much-needed rebuke to the sin of selfishness.

each other; and, all together, I was *very happy*.^{*} I had received a new baptism of the Holy Spirit; and ever since that baptism, if I may so call it, whenever I am tempted to do wrong I feel a chiding of that same Holy Spirit. Sometimes I am tempted to exaggerate, or to stretch the truth a little. Before the words are uttered, a loving hand seems to be laid on my shoulder, and I change my words so as to be more in strict conformity with the exact truth. When I first started (toward forty years ago) for the straight and narrow path, after listening to a sermon that Bro. Reed delivered, I felt as if I loved everybody. I even wanted to pat the horses on their necks that stood in front of the old church where the sermon was preached. I not only loved humanity more, but loved the domestic animals too; and this new baptism has affected me something in the same way. One thing troubles me, however; there are so many lapses into the old way; but, thank the Lord, the fits and starts for a better and more unselfish life are becoming more and more frequent. May God be praised for the Comforter that is promised in our text, and for a Comforter that surely will "reprove the world of sin" if we will only take the Lord Jesus Christ into our hearts and into our *very lives*.

MRS. L. C. AXTELL; ALSO SOMETHING ABOUT
CANCERS, ETC.

Our older readers will, I am sure, recollect Mrs. Axtell. As we have not had any communication from her for quite a time I will explain to our newer readers that, toward forty years ago, Mrs. Axtell was not only a helpless invalid, but I presume that she herself, as well as her friends, felt she was a *hopeless* invalid. While lying on her sickbed she got hold of a copy of GLEANINGS and began to read about bees. Let me explain that she at this very time, notwithstanding her affliction, was a devoted Christian, and had doubtless been praying over her helpless condition; but she became so much interested in bees that she induced her friends to place a hive up near her window where she could see the bees work, and study their habits. It is a long story, but I will go over it briefly. Under the enthusiasm and excitement of watching the bees (I think it was about this time in the spring of the year) she got an appetite and a new hold on life. In a little time she was resting on her elbow while she studied the bees in their busy flights. Pretty soon she wanted the hive opened, or fixed so she could get a glimpse of the inside; and a little later she got off her bed and sat up a part of the time on an easy-chair; and, later on, she began to

lift out the combs and put them back again. Still later she got outdoors and worked with the bees, always sitting down, of course; and a little later *still* she got up on her feet, and with unsteady limbs, doubtless, she walked from one hive to another. The more she studied and handled the bees, the more her enthusiasm and interest developed and her work prospered; and in due time (I do not remember just how long) she was doing the work of a good stout man in the apiary.

Now, this is a wonderful story, even if I should stop right here; but the best part of it is to come. She had always been much interested in the work of foreign missions; and when the idea came into her head (or heart, perhaps), that she could with her bees earn money to help missionaries spread the gospel in foreign fields, a new and *greater* enthusiasm grew up in her heart and soul. It would seem that the great Father above was pleased with her undertaking; for in answer to her prayers and earnest, hard physical work, *he* sent her and her good husband a crop of honey unheard of by even the writers of GLEANINGS—39,000 lbs. in one year. The money that her honey sold for was given to a missionary enterprise, and a little tract was sent out broadcast over the world. I believe the title was, "The Missionary Work of the Honey-bee." I have often thought of Mrs. Axtell of late, and wondered if she were still alive; therefore you may realize with what interest I read the following letter:

Dear Mr. Root:—In GLEANINGS for March 1 you mention having a brown spot on your back, and that cuticura was causing it to go away. By all means keep up the use of cuticura, then, even if it costs \$50.00 a box. Such spots often develop into cancers—not always; but be on the safe side, and drive it away before it gets beyond control. I had a cancer some twenty years ago, in my cheek, caused by decaying bone from ulcerated teeth. I had to have it taken out three times before I got it entirely removed, and it cost me about \$150.00—that is, treatment, board, and travel; but I have never regretted having it taken out when it was small. When large it is much harder to subdue them. The first time it was taken out the doctor put on a medicine that killed it, and I went home and poulticed it until I thought it ready to drop out; but it hung by a tiny thread. I, not knowing the harm it would do, took hold of it and jerked it a little and broke the thread, or root, and in a few months it was growing again. I would never have them cut out, for they almost always grow out again; but if properly killed and drawn out by a plaster they go away—at least that is the way it worked on the five persons I have known to be treated.

Mr. Axtell and I are always interested in all your Home talks, and have been using boiled wheat largely, and similar foods, and have been greatly benefited.

We are still supporting three native preachers and a famine child, and feel greatly blessed in so doing.

You ask if grease would not do just as well as cuticura to drive away the brown spot. I know that grease of any kind is all that is needed to kill vermin on chickens. Years ago I let my chicken-house (nearly new) get very much alive with mites before I knew of grease. I tried several remedies first, then I took a gallon of rancid lard, heated it hot, and took a brush broom and went for it. I greased thoroughly the ends and knots in the roosts, and all cracks and corners of the house, and a little nearly all over—under nests and in the bottoms of nests and in corners. I soon got almost entirely rid of the mites. Grease will kill every bed-bug too if the ends of the slats are smeared with it, and the inside corners of the bedstead.

^{*} Had I been drinking strong coffee or tea I might have thought my inspiration, if that is the proper term, came from the stimulus; but I am happy to say that I had a very plain and simple breakfast and dinner, and nothing but apples for supper; so my happy frame of mind came from following God's laws, and consenting to be guided by the promptings of the Holy Spirit and *nothing else*.

Mr. Axtell and I both have better health than formerly.

Roseville, Ill., March 8. MRS. L. C. AXTELL.

Please notice, friends, that she and her good husband are still interested in mission work. They are still taking GLEANINGS, of course; and, finally, they are both now enjoying better health than usual, although they, like myself, must be getting well along

in years. From what she says in regard to boiled wheat I infer they have been getting in touch with Terry's work.

In regard to cancers, if I am correct a great many things have been pronounced cancers by quack doctors that were not real cancers at all. In this way they get credit for performing cures that does not belong to them.

POULTRY DEPARTMENT

A. I. ROOT.

INDIAN RUNNER DUCKS; BOTH SIDES OF THE QUESTION, ETC.

Mr. Root:—I have been reading your remarks about the Indian Runner duck, and from my experience with them I would advise a rather more conservative course than you seem to think necessary. For a person who has unlimited green feed and range, perhaps they are all right; but where all feed has to be bought, and no clover or alfalfa field available, I do not think them a great money-maker. I have had them for nearly a year, and can not recommend them to any town person, or one who has not the above necessities to enable him to make a good portion of their feed inexpensive. And it is an undoubted fact that there is a prejudice against duck eggs. No matter how groundless it is, it is there, and the public will have to be educated up to the value of the white egg of the Indian Runner before there is an unlimited market for them. Personally I think they are as good as hen eggs; but the average person, in this part of the world any way, does not think so, and I have met this prejudice when disposing of those I had for sale.

Again, there seems to be a great deal in the strain a person starts with. I had some hatched from eggs from Iowa that were beauties, and laid early and well a nice white egg; and I had some hatched from eggs from Ohio that were the veriest scrubs, not fit to be compared to the Iowa birds; in fact, they looked like the same breed only remotely. I had to buy all the grain fed them, and some of the green food; and while I did not lose any thing on them I could not figure out any profit, even though I sold the last of them for breeding purposes at \$2.00 each. I went into duck-breeding to find out what I could do; and having found out, I disposed of the good ones and ate the others. My conclusions are as above stated, that, on a ranch with unlimited green food, they can be made profitable, but not otherwise.

I very much prefer keeping hens. They are much cleaner, and more satisfactory in every way. I have hens that equal Indian Runner ducks in laying, if they do not surpass them.

You have not told us your final conclusions as to Buttercups. Have they equaled the seller's account of them? What do you think of them yourself? Personally I believe it is more the man than the breed. Given the proper feed and care, almost any of the American or Mediterranean breeds will prove very profitable. It is simply a question of color to suit individual tastes. Personally I prefer buff, as showing dirt the least in our long hot dry summer, and I find they lay as well as any reasonable person could desire. I have a Buff Wyandotte pullet, hatched from eggs shipped me from Massachusetts, and she laid when she was slightly over five months old, and has laid constantly all this spring, and shows no signs of stopping; but she is fed for laying, and just naturally "lays."

I have found the Buff Wyandottes a very satisfactory fowl, both as chicks and grown-ups. As chicks they are very strong, sturdy, grow fast, feather out nicely, and, after ten weeks, are ready for market as broilers, and shortly after as fryers. They are a handsome fowl, not wild, easily handled, and, in short, a fine all-around fowl.

I had thirty eggs shipped me this season from California, and, after trying in vain to get any sitting hens, was forced to put them in a small incubator that had not been used in four years. There were 24 fertile out of the 30, and the machine brought out 21 chicks, of which we raised 18, and

nicer chicks or more evenly sized I never saw, and never had chicks more easily raised. These were Buff Wyandottes.

So. Berkeley, Cal., June 21. W. H. PEARSON.

Thank you, friend P., for your timely caution. Very likely it is true that ducks must have a considerable amount of feed of some kind to give us one big egg every day. You will remember my three ducks had the moss I spoke of in the creek or canal, and plenty of green stuff on the shores up and down for a quarter of a mile or more. Under such circumstances they would almost "board themselves;" and your experience also indicates that there is quite a difference in ducks that are called Indian Runner. In regard to cleanly habits or untidy looks, if the ducks are permitted to have free access to running water every day I am sure they will keep themselves tidy; and where one wants to exhibit them to visitors, as I do in my Florida home, running water, and, best of all, a little *waterfall*, is just the thing. Buttercups, see p. 21, adv. section.

INDIAN RUNNER DUCKS, ETC.

You want to know if Indian Runner ducks will sit on their eggs. I have four of them—two ducks and two drakes—and they will sit, not only the ducks but the drakes as well. I built a chicken-house about a foot from the ground, and the ducks go under this to lay. One of the ducks is now sitting on the eggs, and one drake too. May be she has so many eggs she had to call in some help. One of the ducks did start to hatch eggs before that, but I took them away.

I do not think that ducks will replace hens to any extent on our chicken-farms. It takes almost twice as much to keep a duck as it does a hen. Of course the eggs are larger, but not much more so than the eggs of Minorcas. Besides this, people will buy hen eggs before they think of buying those from ducks; and the chances are you may have to take less for duck eggs in spite of their size.

Colimbus, Mont., June 17. CARL VOLLMER.

Many thanks, friend V. I surely want both sides of the question; but while you suggest that it takes almost twice as much to feed a laying duck as a laying hen, please consider that the duck will eat all sorts of cheap trash that a hen would not touch. Not only that, the duck will root around in the bottom of our ponds and streams for mosses and aquatic plants that a chicken would never eat, even if it could get it. I would not recommend ducks for close confinement in places where other fowls can be reared successfully; but there are tracts of waste land along the ponds and streams all over our country—yes, all over the world—where ducks might be grown by the mil-

lions; and even if their eggs do not bring any better prices than hens' eggs, I am sure there is a great opening for a wonderful new industry.

Here is something further about the Indian Runner ducks, which I got from the *Rural New-Yorker*. Please notice this writer corroborates my experience, to the effect that an old drake is often hostile to young ducks, and will kill them if he is permitted to do so. What a sad specimen of an unnatural father!

TRUTH AND "INDIAN RUNNER" DUCKS.

I see you wish the plain truth about the Indian Runner duck. I wish to say I do not see how they can be improved upon when kept in small flocks to supply the farm table with eggs, and roast duck occasionally. They are great layers, among the best in ducks, and they do mature early—three to four pounds each—not heavy enough for a market duck for general consumption. As a market fowl I do not see why they should be expected to compete with the hen on the egg question. The customer must be found, and the market created. Fifty cents a dozen before Easter and 35 cents a dozen for the remainder of the season would be a fair price, but few will pay it, for the simple reason that the public will resent the extra price, the same as your correspondent does what he terms *breeders' prices*. I consider the prices of these duck-breeders for eggs and stock extremely reasonable. Most of them sell eggs for \$1.00 a setting; and \$1.50 to \$2.00 each for stock will not more than pay the advertising bill. My wife says one duck egg in a cake equals two hen eggs.

If the surroundings are agreeable, five ducks will lay 140 eggs a month, and get their own living outside of the morning and evening meal. The quality of the Indian Runner duck egg is mild; the meat, in the hands of a good cook, is delicious. These are reasons enough why they will pay their way on any farm. As to the glowing stories being printed concerning these ducks, one must not rush heedlessly into any enterprise and expect great profits. Find your market first, and then stock up accordingly. I will state briefly how I handle my ducks: I try to close them up nights and turn them out at feeding-time, when they will have laid. They then go to the water, and I do not see them again until it is time to feed grain at night. They can be expected to lay from February until August. Last season I had one commence laying again in the fall, and she laid 60 eggs before the snow came, when she shut up shop at once. I raise the young ducks under Buff Plymouth Rock hens, as they make good mothers and do not kill many in the nest. Yesters, a little hen had spent four weeks on nine eggs, and at the sound of the first peep she threw the egg out on the floor. Not finding a hen on the nests I went to a coop where I had confined some broody hens, selected a Buff Rock, put the eggs under her, and covered her up. To-day she has six bright little ducks, and seems happy in her new surroundings without being restrained in any way. When the young ducks are turned loose the drake will have to be confined or he will kill them. Set duck eggs on the ground to hatch well, otherwise the ducks will probably have to be helped from the shell. Do this 24 hours after the shell is pipped, and after the blood in the lining of the shell has been absorbed by the duckling. Take off the small end of the egg, release the head, and let Mr. Duck do the rest himself. Young ducks thrive best on sloppy food, such as one would feed young pigs—middlings and milk mixed into a batter, and poured into a trough, with cracked corn at night.

Orange Co., N. Y.

GEO. E. HOWELL.

TINTED EGGS AND WHITE EGGS, ETC.

Since so much has been said about having Indian Runners that laid white eggs instead of greenish ones, I have written to friend Jennings for his opinion. Below is his reply:

As to the green-egg layers, I will say that there is no flock in the United States that will lay *all* white eggs all the time. There may be a man who has

one or two that will lay white eggs, but they will not do that all the season. I could not say whether the tinted-egg layers are any better layers than the white or not, as I have ducks that lay tinted eggs the fore part of the season, and during April, May, and June they will lay mostly white eggs. The two ducks that are illustrated on the corner of this sheet laid 105 eggs each, without a miss, and I think they would have done better if they could have had the same kind of feed; but I was compelled to make a change, and that changed their laying a few days.

Mt. Gilead, O., May 29.

KENT JENNINGS.

I have just returned from a visit to my brother, living near Fennville, Mich. He has three ducks, and their eggs, at least those I saw, were what would be called white eggs, although they are not quite as white as some hens' eggs. The tint is more of a brown (what little tint there is) instead of being green or bluish-green, like mine in Florida. I think friend Jennings has given us pretty nearly the truth in regard to the matter; and I am still of the opinion that their *rations* may have something to do with it, especially the shape in which they are furnished lime. A poultry-keeper in Florida who was helping in a grocery told me he could tell from every lot of eggs brought in whether chickens had crushed oyster-shells or not. He said the shell of every egg had a different look when the fowls were provided with plenty of crushed oyster-shells. If people are going to *insist* on having white duck eggs, and if the market will give a little *more* for eggs that are clean and very white, it may be worth our while to look into the matter. By the way, why can't we mix a little *indigo* in their feed so as to whiten the shells in the same way the women-folks whiten their dresses and other articles of clothing?

GARDENING IN FLORIDA; CAN IT BE KEPT UP THE YEAR ROUND?

You will notice that the "spread-eagle" advertising of "homes in Florida," that is now to be seen in almost every periodical (and perhaps some of it in *our own* journal also), fails to mention that there are certain reasons why you can not make garden, very much, the year round in Florida. When I was down there last August I found the truck-gardeners very busy with their plant-beds starting celery, pepper-plants, and perhaps a few other kinds; but as a rule there was little or nothing being done in the open fields. Neighbor Rood was growing beggar-weed, and, I think, velvet beans for hay; and the beggarweed especially made a most astonishing growth, notwithstanding the heat and the excessive rainfall; but the truth is, there are very few crops of any value except hay that will stand the wet and the heat together. All kinds of clover, including sweet and alfalfa, go down in the summer time. See what the Florida Experiment Station has to say in regard to it on page 84, Feb. 1. Last season my brother tried making garden in the summer time. I do not believe any thing succeeded on our place except the chufas. Even sprouted oats in the open ground were a failure. He

sowed the oats and raked them in, but the daily rains, with the excessive heat, for some reason I can not quite understand, caused them to rot instead of sprout. Well, a few days ago I wrote neighbor Rood, asking him how early in the fall it would do to plant garden-stuff, as Mrs. Root would like a nice garden as soon as possible after she gets back to her Southern home. Below is his brief reply:

Mr. Root:—I do not think it will pay one to plant any garden-stuff here till about Oct. 1; then he can put in turnips, peas, corn, potatoes, etc. Until the

heavy rains stop, vegetables do not do well. We had rains every day for a week till to-day. I am tilling land, and it is pretty wet.

Bradentown, Fla., May 23.

E. B. ROOD.

Please note in the above he does not say we *can not* grow garden-stuff earlier than Oct. 1; but he says he hardly thinks it will *pay* to begin gardening much earlier. As a usual thing there is a dry spell that hinders garden-stuff and almost every thing else during the month of May; but you will notice in the above that the May just past has been unusually favorable.

Health Notes

A. I. ROOT

GOD'S GIFTS — ANOTHER "DISCOVERY."

While I was paying 5 cents apiece for apples for my evening meal, our early cherries began to ripen. This early cherry-tree stands right close beside the apple-tree that gave me so many "suppers" last fall. Well, at first I thought cherries were not going to be a good substitute for the apples; but bearing in mind that dame Nature has to get used to a change in diet I kept on eating the cherries for supper—short cut, remember, between "producer and consumer," especially while I was up *in* the cherry-tree. Well, my "great discovery" is that cherries are even *better* than apples, when Nature once catches on and becomes accustomed to it. My good old father died when he was between 71 and 72—just about my age. For some time before he died he told me that he was having a great deal of trouble with his kidneys; in fact, for years he used to keep lemons in the house, and used them frequently, because he said they were beneficial for this special trouble that he had had for so long. Well, it is not strange, therefore, that I have for a great part of my life been troubled in the same way; and some years ago I found out that Florida *grapefruit* seemed to hit the spot and correct this difficulty more than almost any other fruit. I think I have mentioned it before here in these pages. Well, the apples I have been eating for many years before the close of the day have kept me pretty free from all troubles along this line. Our first early cherries were somewhat on the sweet order. The next one to ripen was a rather tart cherry; but as there was not any other kind handy, I commenced taking them for my evening meal—say about a pint; and to my great surprise they proved to be better than apples or any thing else—even more beneficial than the grapefruit. Of course I took my fruit without any sugar, just as God created it and planned it, to correct such maladies as might get a foothold where one is for some time deprived of ripe juicy fruit. A great many people think they can not eat fruit. The doctors, years ago, persuaded even T. B. Terry that fruit was harmful, and for quite a little time he gave it up. Well, fruit sometimes *is* harmful. Let me illustrate:

Some time ago Dr. Kellogg, of the Battle Creek sanitarium, advised those who think they can not eat fruit to make a good full meal of it for any one of the three meals of the day. He said any one could eat fruit with impunity if he made a meal of it and nothing else—no sugar of any kind, mind you. I at once tried it, and ate baked apples for supper and nothing else. Of course they agreed with me finely.

Now, I feel impressed that any one of my ailing friends (and I know there are thousands) can get more real enjoyment from fruit only for supper than any thing else in the world, and better health; and I do not know of any better fruit for such an experiment than cherries. If you go to a good nurseryman and tell him you want some cherry-trees, one or more, that will begin to ripen at the very first, and others to continue until the very latest, he will provide for you a cherry diet for a good many weeks, just at a time when the system seems to need the beautiful and delicious tart that the cherry furnishes. Of course, cherries come right in at the same time as strawberries; but strawberries always seem to trouble me more or less until I become gradually accustomed to them.

Now, my good friends, please try a supper of nice tart fruit, without any sugar or any thing else, and relieve the good wife of the necessity of getting *three* elaborate meals a day. I am sure she will jump at the chance of getting you up a tiptop breakfast, and dinner too, if you will let up in your demand for the usual supper, with dishes to put away, etc.; and after the dinner things are put away, you and your wife can go out for a ride, or anywhere you choose, to see what is going on in this big world of ours, without any bother or responsibility concerning "supper-time." And, by the way, do not have any thing to do with the banquet and such follies as are now getting to be so fashionable, after you have already eaten all you ought to during the daytime. May the Lord be praised for the beautiful luscious cherries that he has with such a lavish and loving hand prepared (especially during the present season), for those who love to study and enjoy his wondrous and precious "gifts."